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Address

"DO'S" AND "DON'TS" IN THE DIAGNOSIS OF EARLY PULMONARY TUBERCULOSIS IN ADULTS AND CHILDREN."*

By John B. Hawes, 2d, M.D., Boston.

There is no more important subject in medicine than the early diagnosis of tuberculosis. It is one concerning which I frankly admit that I can offer nothing especially new. I can merely call attention to various well-known points, and reiterate the same old truths, the majority of which every doctor is, or should be, familiar with. I am purposely arranging what I have to say in very elementary form. The medical literature of today is so filled with articles of complex nature, detailed, and often difficult to understand and digest, that I believe one which is simple in the extreme may be a relief, and may be welcomed by the general practitioner.

Despite the great number of papers and books which have been written on the diagnosis of early tuberculosis, the medical profession has still a long way to go. I am constantly receiving application blanks for admission to our state sanatoria, in which the doctor has classified his patient as "incipient," and yet has frankly given certain data in the way of temperature, pulse, loss of weight, etc., which directly contradict his statement. This, although not satisfactory, at least means that the physician is frank and honest, and has given the facts as he saw them.

On the other hand, I am constantly sending patients to our State Sanatorium at Rutland,—reserved, as you know, for early and incipient cases,—because from everything that I could judge by on the application blank, the patient was really a Rutland case. Far too many of these patients on their arrival at the Sanatorium are at once classified as "advanced." On the whole, however, the situation is slowly improving. In 1910, when the state board, of which I am secretary, first took over the Rutland Sanatorium, doing away with the old system of special examiners for that institution, and placing this work on the shoulders of the medical profession of this state, where it really belonged, the percentage of incipient cases at Rutland fell from about 30%, under the old system, down as low as 18% of the whole number. Gradually the proportion of incipient cases has been rising, so that during the past year the proportion of incipient cases was 37% of the whole,—the highest that it has ever been in the history of the Rutland State Sanatorium.

I have taken up what I consider the most important points, and have discussed each one in turn.

Diagnosis in Adults: "Do's."

Remember the following points:—

(1) *Take a careful history of your patient.*

This procedure is probably more neglected

* Read at a meeting of the South Boston Medical Society, Feb. 8, 1915.

than any other. The average busy physician with an office full of patients, or with various outside visits to make, does not like to listen to the long and often disconnected tale of a worried and nervous patient. He wants to get down to bed-rock, as he calls it, at once,—to get at the real facts, which he believes he will find by examining the chest. He makes a great mistake in so doing. History taking is an art in itself, and one well worth cultivating. The time which it takes need not be long. While it is well in some cases to let the patient do most of the talking, in most instances it is better for the physician to ask certain definite questions in a logical and regular sequence. I have a definite routine in my own work, from which I very seldom vary. It takes but a few minutes to find out concerning family history. If there is a family history of tuberculosis, it is important to go further and to find out concerning the intimacy and length of contact with the afflicted person. The habits of the patient should be briefly gone into, especially the question of syphilis.

In the past history, the children's diseases are of comparatively minor importance, except measles,—particularly if this occurs in adult life. I invariably ask every patient whether during the years from 15 to 21 he considered himself, or was considered by his parents, as of the strong and robust type, the thin and wiry type, or of the delicate type. The correct answer to this will give much valuable information.

Coming to the present illness, it is important to ask not, "When did you first feel sick?" but rather, "When did you last feel perfectly well?" This should be followed by finding out exactly for what special thing the patient comes for advice. It takes far longer to describe this process than it does to take the history itself, in most cases.

(2) *Remember the paramount importance of constitutional signs and symptoms.*

If in diagnosing a given case of suspected tuberculosis, I were obliged to give up one of two things,—either the use of my stethoscope and percussion, or a careful inquiry into the constitutional signs and symptoms of the patient, I would decide at once to do away with auscultation and percussion, as of infinitely less importance. In far too many cases the physician pictures in his own mind a case of tuberculosis as a patient with a bad cough and a positive sputum, and on examination, with dullness, bronchial breathing, and râles at one or both apices. In most cases, except for a cough, which is usually present, the constitutional signs and symptoms are far more striking, and their study gives far more information than anything else.

(3) ***Remember that loss of weight must be satisfactorily explained.***

Among my routine questions I ask every patient: First, "What is your maximum weight?" Second, "Your present weight?" Third, "What do you consider good average weight for you in health?" Fourth, if the patient has lost weight, "Over how long a period has this loss taken place, and how do you account for it?"

Unless these questions are asked, and the matter gone into in detail, the physician is apt to be led astray. A patient might say that he has lost twenty pounds in weight during the past six months; unless this loss can be satisfactorily explained, it would be a very important factor indeed. On inquiry, however, it might be found, and frequently is found, that there is a perfectly good reason for this decline. Unless this loss can be explained in some way, it should be considered as an important factor in your final diagnosis.

(4) *Loss of strength and energy.*

Along with loss of weight, there may or may not be a loss of strength and energy. The combination of the two is of more importance than either one alone. This is something concerning which inquiry should be made in every case.

(5) *Do not forget the importance of undue fatigue and ease of tire.*

I always ask my patients if they feel rested in the morning after a good night's sleep. I likewise inquire as to whether they are more tired out at night than they feel that they ought to be. Most of us after a hard day's work are naturally tired in the evening. There is, as of course you know, a vast difference between wholesome physical fatigue, which is a natural and proper feeling, and that other kind of fatigue, which is distinctly abnormal. I find that generally patients have very shrewd ideas on this subject. It is important to bear in mind, particularly in women, that in neurasthenic conditions and others of a similar nature, this symptom of undue fatigue and ease of tire may be a prominent one.

(6) *Continual or occasional evening fever must be explained.*

The patient's own ideas as to whether or not he or she has had fever are apt to be very vague. This is a point which the physician must investigate for himself. The thermometer is not used anyway nearly as much as it should be. In the absence of other definite causes, if a patient is found to be running an afternoon or evening fever of 99° or over, a tentative diagnosis of some such infection or toxemia as tuberculosis is justifiable. It is not always possible, and often is impossible, to get satisfactory results with temperature and pulse records at home. In many instances, however, one can obtain valuable information in this way.

(7) *Remember the importance of a subnormal temperature accompanied by a high pulse.*

In a recent valuable article, Dr. Arthur K. Stone of this city has emphasized this point. It

is one rarely mentioned in the literature. I do not say that the combination of the subnormal temperature and high pulse always means tuberculosis. I do say, however, that this combination, along with other signs and symptoms, may be and often is caused by tuberculosis.

(8) *Remember that a hemorrhage is evidence of pulmonary tuberculosis until the contrary is proved.*

There ought to be very little discussion needed on this point. I believe that every physician knows this just as well as I do, but the fact remains that doctors throughout the length and breadth of this Commonwealth are continually telling patients who have consulted them for a hemorrhage of this kind that the blood comes from the nose, the throat, the gums or the stomach. In other words, they are afraid to tell the patient the truth about the matter, simply because in other respects he often seems so perfectly well and strong.

Of 80 patients who had been treated in our state sanatoria, and who first consulted a doctor on account of a hemorrhage, 39 were told by their physician that they did not have consumption, and that the blood did not come from the lungs. Failure to observe this rule is causing many tragedies and unnecessary deaths.

(9) *Bear in mind that pulmonary syphilis is not so uncommon as it is supposed to be.*

If you bear this fact in mind, you will once in a while make a brilliant cure of a well-marked case of tuberculosis by means of mercury and iodide of potash. Particularly in those cases in which the lung signs are unusual and obscure, if you can obtain a definite history or even an indefinite history of luetic infection, give the patient the benefit of the doubt, have a Wassermann done, or even without the Wassermann, give him mercury and iodide of potash.

(10) *Remember that early cases of exophthalmic goitre may simulate early pulmonary tuberculosis in every way.*

While the treatment of these two conditions is exactly the same, it is, of course, quite unfair to condemn a patient as a consumptive when he is really suffering from excessive thyroid secretion. In women where the nervous symptoms predominate, although the thyroid enlargement may be of the slightest, and ocular signs may be absent, remember and at least consider the question of hyperthyroidism before you state definitely that the patient has consumption.

(11) *Depend more on your thermometer, your history and constitutional signs and symptoms than you do on percussion and auscultation.*

As I have stated before, physicians are far too prone to jump for the stethoscope and to look for something which they can see, feel or hear, instead of studying the somewhat less tangible and less satisfactory, although far more important, evidence obtained from the patient's history, habits and symptoms.

(12) *Remember to use your common sense.*

Bear in mind that it is a human being, and not merely a pair of lungs, that you are dealing with. If medicine were an exact science and if our methods of diagnosis were those of mathematical precision, this point would not be so important. In my mind, the art of medicine should play just as great a part as the science of medicine. One will not go so far in diagnosing tuberculosis, or any other disease, in its early stages, therefore, unless he considers the human side of the subject.

"DON'TS."

Do not forget the following:—

(1) *Don't be in too much of a hurry.*

Some diagnoses can be hurried. It takes only a few minutes to take a drop of blood and to stain and examine a slide for malaria. It often takes no time at all to diagnose a broken arm or leg. One cannot hurry the diagnosis of early tuberculosis, however.

(2) *Don't forget to strip the patient to the waist.*

Whether man or woman, child or adult, this should be done in every case. No question of false modesty should be allowed to stand in the way of so doing. The physician who attempts to listen through the clothing at once classifies himself as a remarkably poor doctor.

(3) *Do not expect to find marked signs in the lungs in every case.*

If you will remember the pathology of early tuberculosis, you will, of course, see how impossible it is for very marked signs to be present. As I stated before, the old picture in most of our minds of incipient tuberculosis consisted of dullness, bronchial breathing, and râles at one apex. This combination does not mean incipient tuberculosis. The students at our medical schools do not receive sufficient training on this matter, for the evident reason that cases of early tuberculosis are hard to demonstrate.

(4) *Do not wait for a positive sputum.*

How many patients there are who have been lulled into a sense of false security by the possession of a postal card from a local or state board of health, bearing the words, "Tubercle bacilli not found." While the statement that "When bacilli are present in the sputum, the patient is already in the advanced stages, and his chances of cure nearly gone," may be an extreme one,—fundamentally it is true. Therefore, if there are other signs and symptoms, showing that your patient is sick, even if the sputum may be negative, give your patient a chance, and start him on the right track. It may be

wise to explain the situation to him frankly, and to say that while you cannot state definitely in the absence of a positive sputum that he has tuberculosis, you feel very sure that he does have it, and the only safe thing for him to do is to treat himself as if he were a consumptive.

(5) *Don't forget that practically all pleurisies, wet or dry, of idiopathic origin, are tuberculous.*

This statement does not, of course, include pleurisies following or accompanying pneumonic or rheumatic processes or those due to trauma. It should also be borne in mind that many of these tuberculous pleurisies are caused by a very mild and non-virulent type of organism. I do not believe that every patient with a pleurisy should necessarily be at once packed off to a sanatorium; I do believe, however, that he or she should be made to understand definitely and clearly the exact state of affairs, that the process is due to tuberculosis and that careful supervision and watchfulness are necessary to prevent disaster.

(6) *Don't forget to look elsewhere than the lungs.*

Scars in the neck, or signs of tuberculosis in other parts of the body may give you the best of evidence. Make your routine physical examination as thorough as possible.

(7) *Don't base your diagnosis on x-ray evidence alone.*

I feel very strongly on this point. Whereas the x-ray, properly interpreted by an expert in his line, can give valuable evidence as to the extent of any given lesion, we must always remember, however, that the x-ray deals simply in lights and shadows, and that it gives no information as to whether any given process is active or inactive, old or recent. The x-ray is a valuable adjunct to our means of physical examination; it should never take the place of our older, well-known methods.

(8) *In adults do not place any value on the skin tuberculin test, whether positive or negative.*

In patients over 18 or 20 years, I would pay absolutely no attention to a positive or negative skin tuberculin reaction. As far ar the subcutaneous test is concerned, my best advice to the general practitioner is to leave it alone, and let those only perform this test who are qualified by experience and the nature of their training to do it properly, and to interpret its results wisely.

(9) *Don't forget that chronic bronchitis, influenza, bronchiectasis, emphysema, asthma, and other chronic and sub-acute lung conditions still exist and will continue to exist, and that they often resemble pulmonary tuberculosis.*

In these days when medicine is made a public matter, and educational campaigns in suppressing tuberculosis and other diseases are carried on, our younger and enthusiastic doctors, particularly those recently graduated from the medical school or from the hospital, are apt to find tuberculosis everywhere and apparently to forget the existence of these other conditions.

At a recent meeting, Dr. John L. Morse of this city voiced this sentiment when he remarked that he has to spend much time among his students in assuring them that every child with a cough did not necessarily have consumption and that every baby with the snuffles did not invariably have syphilis. These points are worth remembering.

(10) *Don't forget that the reverse of the above is also true.*

While it is true that the conditions mentioned in the last heading often resemble pulmonary tuberculosis, and that many patients are given the stigma of that disease quite unjustly, it is, of course, evident to everyone that much more harm is done by quieting the patient's fears with the words "chronic bronchitis" or "influenza," when he really is consumptive.

(11) *Don't forget that people may be run down, tired, weak, etc., without having consumption.*

Here again there are the two sides to the question. While the diagnoses of debility, neurasthenia, and "run down condition," anemia, etc., are far too often given, and in far too many cases simply mean ignorance on the part of the doctor, there is, nevertheless, a growing tendency to cry out, "This is tuberculosis!" the instant any one of us gets below par in any way. There are clinics in Boston which I would hesitate to attend if I happened to have a bad cold, because I feel very sure that I would at once be called a consumptive, and that an application would be made out for me to go to Rutland. It is undoubtedly true that many of those periods which most of us have gone through, and which we have called being "run down"—usually in the spring—are due to a slight awakening of a hitherto latent tuberculous focus. It is dangerous, however, to carry this too far. The shop-girl, tired from the Christmas rush, may resemble a consumptive in many ways. It is needless to mention other examples of this condition of affairs.

DIAGNOSIS IN CHILDREN.

Diagnosis of early tuberculosis in children differs in many important details from that in adults. The general underlying principles, however are the same. The more important points I have tried to emphasize in the following pages:

"DO'S."

Remember the following points:—

(1) *Remember the difference between tuberculous infection and tuberculous disease.*

It is extremely important for every doctor to have a clear idea of the difference between tuberculous infection and tuberculous disease. It is a startling fact, but undoubtedly a true one, that by the time 80 or 90% of us reach the age of 15 years, we are already infected with tuberculosis. The mere fact that the great majority of us, however, remain strong and healthy, and live at least an average life-time, shows clearly that this tuberculous infection does not necessarily imply disease.

(2) *Remember the frequency of tuberculous infection.*

This I have emphasized above. Autopsy statistics and evidences based on reliable tuberculin tests have shown only too clearly the impossibility of escaping the tubercle bacillus. All we can do is to reduce to the smallest amount possible the number of bacilli that are taken into the body, and so to live that this tuberculous infection remains a quiescent and harmless process.

(3) *Remember that in children tuberculosis is primarily a disease of the glandular system.*

Whereas in infancy tuberculosis takes the form of a general septicemia, and is rapidly fatal, in the years of childhood it primarily affects the glandular system all over the body. It is only when this first line of defence is broken through that the lungs or other organs are affected.

(4) *Remember the importance of exposure, and that bovine as well as human sources are of importance.*

This is particularly important in the case of children. The modern campaign for clean milk has emphasized the fact that bovine tuberculosis in children, particularly of the glandular system, is often due to tuberculous milk. While there is wide variance as to the amount of tuberculosis due to this cause (up to 75%, according to English; and down as low as 5%, according to German investigators), it is, nevertheless, doubtless true that a very considerable proportion—probably 15 or 16%—of cases of tuberculosis in children comes from a bovine source.

(5) *Remember that in children by the time the lungs themselves are involved, the disease is far advanced.*

One of the greatest steps we have made in the diagnosis of this condition in childhood is our increased familiarity with bronchial gland tuberculosis. Whereas in adults, as I have said before, it is stretching the truth a bit to state that a patient must be past the incipient stages if we find tubercle bacilli in the sputum, and definite signs of a consolidation at one apex, in the case of children, however, it is only too true. We must make the diagnosis long before the pulmonary tissue itself is involved. In these real early cases one rarely finds signs at the apices. It is by means of a positive cutaneous tuberculin test, the x-ray, perhaps slight interscapular dulness, sometimes enlarged veins on the chest, frequently a positive d'Espine's sign, combined with constitutional signs and symptoms, on which our diagnosis is based.

(6) *Remember the importance of constitutional signs and symptoms.*

In children, as in adults, the careful study of these signs and symptoms, which show that the whole body and not merely the lungs are sick, will offer the most reliable information.

The principal constitutional signs and symptoms are ease of tire, the loss of weight or failure to gain weight, pallor, malnutrition, and debility.

One of the superintendents at a Massachusetts State Sanatorium has gone so far as to state that in his opinion ease of tire and interscapular dulness alone justify a "tentative" diagnosis of tuberculosis. While I do not for a minute agree with this statement, even making the fullest allowance for the word "tentative," I do feel that if a child is pale, has lost weight, has slight fever, and at times a slight cough and in addition shows certain signs in the lungs, that a diagnosis of probable tuberculosis is justified, although I would not on such evidence alone call the child a consumptive.

(7) *Remember that, while in adults there is no cough characteristic of tuberculosis, in children there may be present a cough which is more or less characteristic of bronchial gland enlargement.*

These bronchial glands are situated at the root of the lungs, and if they attain sufficient size, may press on the trachea, the large bronchi, or on nerves, and thereby cause a paroxysmal, strident, brassy cough, usually without sputum, often closely resembling whooping-cough.

(8) *Remember that a positive skin tuberculin reaction is of infinitely greater importance in children than in adults.*

Dr. Orville F. Rogers of this city has recently made a careful study of this point from a fairly large number of cases at the Massachusetts General Hospital. He has come to the conclusion with which I would strongly agree, that in children of five years or under, a positive skin test is good evidence of active tuberculosis, and that such children are not apt to live long. Furthermore, that in children ten years old or under, a positive skin test means, on the whole, a greatly increased mortality from tuberculosis. The value of the positive test becomes less and less with increased age.

(9) *Remember that the x-ray in children may show enlarged bronchial glands, but that it does not prove these glands to be necessarily tuberculous.*

As I said in discussing the x-ray in adults, it gives no knowledge as to the etiology of these

glands, or to whether they are active or inactive, old or recent. We have been far too apt to take it for granted that glands as shown by the x-ray and by a positive d'Espine's sign are necessarily tuberculous. We are now learning that such enlarged glands may be present following any ordinary acute bronchitis, or any acute infectious disease.

"DON'TS."

Don't forget the following points:—

(1) *Don't fail to realize the responsibility you are taking in stamping a child as tuberculous.*

I feel very strongly on this point. I do not feel that it is at all fair to the child, to the parents, or indeed, to the community to stamp every child who is run-down, and who has a slight cough, as a consumptive, and to send him or her to a tuberculosis hospital or sanatorium.

(2) *Do not forget in cases of doubt that it is possible, and far better, to institute proper treatment without casting the stigma of tuberculosis.*

Nowadays, when the public in this state, at least, is fairly well alive to the need of preventive medicine, it is perfectly possible to put the child on a proper line of treatment, which will not only help to arrest his tuberculous process, if there be one, but will also improve his general condition and eradicate whatever germ may be in his system, without using the words "consumption" or "pulmonary tuberculosis."

(3) *Don't make up your mind beforehand as to what you are going to find.*

It ought not to be necessary to speak of this. Unfortunately, however, our minds are apt to run in certain channels. I personally have to guard constantly against this, and I know there are numerous other doctors who have the same tendency.

(4) *Don't forget that while a positive d'Espine sign is good evidence of enlarged mediastinal glands, it does not prove that they are tuberculous.*

I have spoken of this before, but the point is an important one. A positive d'Espine sign, or, in other words, bronchial whispered voice sounds, heard below the level of the fourth dorsal vertebra, is good evidence that the mediastinal glands are enlarged. It is not safe, however, from this sign alone to draw any further conclusions.

(5) *Do not expect to find marked signs in the lungs in every case of bronchial gland enlargement.*

This diagnosis is a difficult one to make. A type case is characteristic. Substernal dulness, interscapular dulness, enlarged veins on the chest, glands in the neck, and paroxysmal, brassy cough, make evident the underlying condition. In most instances, however, you must base your diagnosis on far less than this.

(6) *Don't forget that processes due to influenza, the pneumococcus, and other organisms are common in children, and are often mistaken for tuberculosis.*

Little patches of consolidation, due to either influenza or the pneumococcus, may simulate in every way one due to tuberculosis. While the treatment is approximately the same, the prognosis is, of course, very different. It is well to bear this in mind, especially in those cases where the lung signs are marked, but the constitutional signs and symptoms very slight or absent.

(7) *Don't forget that improper feeding, diseased tonsils, and increased adenoid tissue, a chronic middle ear, and other conditions may simulate tuberculosis.*

In other words, this simply means that your routine examination must be as thorough as possible; that you must not take it for granted that tuberculosis is the cause of a child's run-down condition, but must always be broad-minded enough to realize that other factors may be at work, and may adequately explain the present state of affairs.

(8) *Don't forget that your diagnosis rests, not on one or two striking signs and symptoms, but on an accumulated mass of simple details.*

In other words, after you have been over the case, have the evidence down in writing, if possible; if not, clearly in your mind;—and give it all due consideration before you come to your final conclusion. Do not be carried away by one or two striking points, whether negative or positive.

(9) *Do not forget to be frank and open with the parents, and to explain to them the exact situation.*

The days of mystery in medicine are passed. I find it, personally, far better to take the parents into my confidence whenever possible,—to explain to them if I am in doubt as to the state of affairs, exactly *why* I am in doubt; to explain to them *why* I am demanding that certain things be done, and advising a certain course of treatment. I am sure that I thereby get better results than I would if I were simply to say, "Do thus and so,"—without giving my reasons for so doing.

The above "do's" and "don'ts"—points to be remembered and points not to be forgotten—are, I believe, the more important features in the diagnosis of early tuberculosis. I sometimes wish that a large chart could be prepared, which could be hung up in every physician's office, so that he would be forced to see it every day, and to have it in front of him whenever he examined a patient. A mental chart, to be given a prominent place in every doctor's mind, will serve the purpose still better. I sincerely hope that these few somewhat elementary remarks of mine may serve to act in this capacity.

Original Articles.

A STUDY OF 260 CASES OF ACUTE APPENDICITIS AT THE MASSACHUSETTS GENERAL HOSPITAL.

By Lincoln Davis, M.D., Boston,

Assistant Visiting Surgeon.

As was said in a discussion on acute appendicitis at a recent meeting of the Surgical Section of the American Medical Association, the last word has not yet been said on acute appendicitis. Yet there is at the present time quite substantial agreement among surgeons as to when and how to operate for this condition.

There remains something to be said, however, on this subject as long as cases with perforation and abscess continue to come daily to our large hospitals. As Dr. J. M. T. Finney[1] forcibly expressed it: "The last word has not been spoken, nor will it be spoken, until we have 100% recoveries. . . When a death occurs from appendicitis it is *prima facie* evidence that somebody has made a mistake. When pus is found in appendicitis, it is *prima facie* evidence that somebody has blundered. It is not always the physician nor is it the surgeon. . . No case of appendicitis should progress so far as the formation of pus."

The prime factor in the mortality of appendicitis is delay in diagnosis. This threadbare doctrine must still be preached to the laity and the profession. Another factor in the mortality even less excusable is the pernicious custom of administering a purgative early in the attack. In at least a third of the cases which form the basis of this report, violent cathartics had been administered before the patient came to the hospital. Often the castor oil or salts are taken on the initiative of the patient himself or his family, but, unfortunately, the family doctor, in spite of all that has been said on the subject, still continues to commit this serious offense. However desirable it might seem theoretically to empty the cecum by a cathartic in the earliest stages of an attack of appendicitis, when it might be assumed that there is merely swelling and congestion of the appendiceal mucous membrane, an enormous practical experience has taught surgeons that it is utterly impossible by any clinical sign to be sure of just what the condition of the appendix is at any given moment. How often the medical consultant, misled by the mildness of symptoms, lack of fever and pain, etc., is surprised and horrified to find at the time of operation that the appendix has already perforated. Appendicitis is notoriously insidious. In a few hours the mildest attack may break forth into the fulminating type. Who can say at any given moment that the appendix is not engorged and tense with acute inflammation, ulcerated and perhaps gangrenous and about to perforate? With such uncertainty as to the actual state of inflammation in the appendix, what folly, to use no harsher term, to call into play deliberately the dangerous forces of vigorous peristalsis.

Before actual macroscopic perforation occurs, there is a migration of bacteria through the wall of the appendix which causes a localized peritonitis, with plastic exudate, and adhesions of the adjacent coils of intestine about the threatened locality. This is a protective process on the part of nature which is preparing to wall off and localize the flood of septic material which is poured out upon actual perforation.

The ideal treatment for acute appendicitis, of course, is to remove the appendix while the inflammatory process is still confined to within its walls, and thus forestall perforation. This, unfortunately, is not always possible on account of obscurity of diagnosis, objections on the part of the family, lack of necessary surgical skill at hand, etc. Granted that prompt operation is the logical treatment for acute appendicitis just as soon as the diagnosis is made, it should be the aim of the physician to promote, or at least not to hinder, the protective efforts on the part of nature while making the diagnosis or awaiting the arrival of the surgeon. This is done by the withholding of food and cathartics, unloading the lower bowel by enema if necessary, and checking peristalsis by small doses of morphine. The disastrous results of violent purging may be readily conceived in premature perforation of the appendix, before the protective plastic adhesions are formed; the tearing apart of such soft adhesions, should they already have formed, and the flooding of the peritoneum with the septic contents of appendix and cecum. Peristalsis not only hastens perforation and prevents localization, but also increases the amount of septic intestinal contents poured out.

Now it must be said in justice to the doctor, that a cathartic is seldom given after the diagnosis of acute appendicitis has been made, except by the few case-hardened sinners who attempt to "scatter" the inflammation by a purge.

The average general practitioner sees perhaps 50 cases of bellyache to one of appendicitis, and castor oil is a time-honored and ready remedy for the former. Appendicitis should be suspected in every case of abdominal pain and a cathartic given only when it can be absolutely excluded. It should be a rule never to give a cathartic for acute abdominal pain with fever. Use an enema instead. This is better treatment even for a bellyache.

About fifteen years ago there was much criticism by surgeons of general practitioners for giving morphine in suspected cases of appendicitis, thereby masking symptoms and delaying diagnosis. This criticism had a most marked effect, so that today practitioners pride themselves on the withholding of morphine in their cases, using an icebag or other local anodyne instead. The preliminary administration of morphine is now quite unusual in cases coming into the hos-

pital. As a matter of fact, after the diagnosis is made, the administration of morphine is not at all bad treatment; its administration should not, however, delay the operation. Just why general practitioners have taken the criticism as to the use of morphine so to heart, and yet disregarded the ten times more serious charge of purging, is difficult to understand.

This series of 260 cases includes my entire personal experience at the Massachusetts General Hospital. With the exception of one case operated on during interneship in 1899, the cases date from 1905, with increasing numbers each year, through my last service in 1914. Only definitely acute cases are included; no cases of the subacute, chronic or relapsing type are counted in this series. It does, however, include all cases of general peritonitis arising from the appendix, even cases in which the diseased appendix was not seen, but in which the clinical diagnosis was evident. Furthermore, every case seen was operated upon, the operation being immediate in all but four cases, two in which preliminary Ochsner treatment was tried for a short time, and two other cases in which the patients were kept over night under an incorrect diagnosis. That these cases were all of the acute type is attested by the fact that in all but 12 drainage was used. There may have been, and probably was, an excess of caution in this direction. When the disease is strictly confined to the appendix itself, drainage is probably not necessary, but personally I have felt safer when there was fever and leucocytosis, with fibrin on the intestine and cloudy fluid about the appendix, to leave in a cigarette drain. It weakens the wound hardly at all if a muscle retracting incision is used and it is removed early, while it is very conducive to one's peace of mind.

The appendix was removed in 244 cases, an attempt always being made to do so, unless the general condition of the patient or the local conditions seemed to forbid. The appendix was reported perforated in 87 cases, gangrenous in 92 cases, ulcerated in 11 cases, acutely inflamed and swollen in 52 cases. In one case of general streptococcus peritonitis the removed appendix was reported as not inflamed. No other definite source of infection was found, although the seminal vesicles were suspected. This case probably should not be included here, though clinically it was typical of appendicitis.

In 16 cases the appendix was not removed. In 13 of these, large localized abscesses were merely drained without special search for the appendix; in 2 cases the abscess was drained by rectal puncture. In 3 cases of severe general peritonitis, the peritoneal cavity was merely drained without search for the appendix. There were all together 136 cases, over one-half the entire number, in which there was pus outside the appendix in the peritoneal cavity. In 108 cases the pus was localized in one or more abscesses. In 28 cases pus was free in the peritoneal cavity as far as the exploration permitted the determination of this fact. In very many other cases there was free turbid fluid, which was not regarded as true pus.

As previously mentioned, an operation was performed in every case seen; the operation was immediate in all but 4 cases. A large number were performed at night. Fifteen patients died, a mortality of 5¾%.

A study of the 15 fatal cases shows that 7 of them, Nos. 192953, 171254, 170833, 169862, 176985, 196620 and 195054, exhibited all the signs of severe general peritonitis before operation, viz., general abdominal rigidity, tenderness, distention, vomiting, poor pulse and great prostration. They varied from the third to the sixth day of the disease. They were recognized as desperate risks before operation. Immediate rapid operation for drainage and incidental removal of appendix, if readily accessible, was undertaken in 6 cases. The presence of diffuse peritonitis was confirmed in all. There was no rally in any of these cases after operation, and death ensued within a few hours in all, except one case, in which death occurred after five days. In one case Ochsner treatment was tried for four days, with some improvement at first, then the patient began to fail again, with rising pulse and temperature, vomiting and failure to retain salt solution. He was then operated on as a last resort and 2 or 3 pints of pus drained from the abdominal cavity, after which he sank rapidly and died within a few hours.

It is my firm conviction that none of these seven cases could have been saved by any operative procedure. Whether or no Ochsner treatment might have resulted favorably in any of them, it is impossible to say. It was tried in only one other case, No. 171338, a boy of 8 years, who entered the hospital on the fourth day of the attack, desperately sick, with vomiting, distention, pulse 170 and cold extremities. He was put on Ochsner treatment for four days and made remarkable improvement; pulse fell and temperature rose, vomiting ceased, and at the end of four days he seemed to have reached the turning point and to be again on the downgrade. A rapid operation was done, with drainage, and he made a stormy but ultimate recovery.

Of the 21 other cases in which evidence of diffuse purulent peritonitis was found at operation, there were 14 in which there were severe pre-operative signs and symptoms of peritonitis. One or two of these were almost, if not quite, as sick as some of the 7 that died. It is a striking fact that over half of these cases were in children. As a result of this review I am convinced that the Ochsner treatment has a distinct, limited, but precious field of usefulness. As a general rule I prefer to apply it after operation rather than before, but as its author requests, we can at least make use of it in the cases in which we feel that operation will surely result fatally. I am inclined in the future to give it a

more liberal trial in those cases at about the third or fourth day, when perforation has just taken place and which are temporarily overwhelmed and prostrated by the dose of septic poisoning.

Of the 8 remaining fatal cases there was no particular indication of a bad prognosis at the time of operation. One case, to be sure, No. 190581, had a temperature of 104.6 at time of entrance before operation, on the third day of the disease. He had a gangrenous appendix wrapped in omentum. The appendix was removed and stump and pelvis drained. Chills occurred on the second day after operation and continued thereafter. He finally died six weeks later, of pyelophlebitis, plus abscesses of liver. Of the 7 other fatal cases, 4 cases had well developed and fairly well localized abscesses, with symptoms of from four to eleven days' duration, 2 cases had more or less localized peritonitis and one case had a high retrocecal gangrenous appendix with very little pus. The appendix was removed in all of these cases, and in 2 of them it may fairly be objected that the dissection necessary to permit of this was contributory to the spreading of a fatal peritonitis. In one other case the result might be attributed to technical error, that of a large pelvic abscess with fibroids of the uterus. A median incision was made and one tube and ovary removed before the causative factor, a gangrenous appendix, was found and removed. A fecal fistula of the small intestine developed in this case; three unsuccessful attempts were made to close this, and the patient finally succumbed on the 24th day. In this case and one other in which marked costo-vertebral tenderness led us to suspect a kidney lesion, operation was delayed over night. I do not think that the delay in either of these particular cases was an important factor in the result. Such errors of diagnosis, however, occurring in a great hospital, with every facility for investigation at hand, should incline us to some charity in condemning the medical consultant for occasional delay in diagnosis in the patient's home. In the other fatal cases, four in number, the technic of operation was the same as had been carried out in a great many similar cases with success. It can only be said that for some reason the infective process spread and involved the rest of the peritoneum. One of the cases was complicated by post-operative bronchitis and severe secondary hemorrhage from the epigastric vessels on the eleventh day. In 2 cases there was an unusual amount of foul, bloody oozing from the wound, not sufficient to be considered a hemorrhage, but very likely a factor in spreading infection.

The question of when not to remove the appendix in any given pus case is one requiring the nicest degree of judgment. As a rule I believe that it is possible to remove the appendix without undue increase in risk in the great majority of cases. On the other hand, when the patient is old or in poor condition, or the appendix not readily accessible, there is no question but that we should content ourselves with simple drainage.

The prevention of pylephlebitis is undoubtedly often beyond our power. When a wad of inflamed omentum is wrapped about a gangrenous appendix, I believe it is advisable to ligate and resect a generous portion of the omentum with the appendix, especially if there is a very high temperature or chills. Furthermore, having watched the harrowing progress of one case of pylephlebitis of my own, and another in the hands of a colleague, I feel that I never would again stand by without making some attempt at arresting the septic process by ligation of the affected tributaries of the portal vein. The successful cases of Wilms[2] and Braun[3], and the experimental work of Neuhof[4] and others have opened up suggestive possibilities in this line.

Besides the very serious complications of peritonitis and pylephlebitis, already considered, other complications occurred as follows in 23 cases, often two or more associated together in a single case: Residual abscesses developed in 8 cases; pelvic, 5 cases; abdominal, 2 cases; subdiaphragmatic and abdominal, 1; pneumonia, 4 cases; broncho-pneumonia, 1 case; bronchitis, 1; secondary hemorrhage from epigastric vessels, 2; intestinal obstruction, 2; mental depression; salpingitis, 1; thrombosis of leg, 1; fecal fistula, 2; scarlet fever, 1; miscarriage, 1; infectious diarrhea, 1.

Secondary operations were performed for complications in 13 cases, not including 3 cases in which enterostomy was done through the wound in nearly moribund general peritonitis cases. I have yet to see any benefit from this procedure in such cases. Residual pelvic abscesses were opened in 3 cases by vaginal puncture, once by rectal puncture. In 4 cases abdominal incisions were made for residual abscesses, in 2 cases in the left flank. In one of these cases there were 3 such operations, one being for subdiaphragmatic abscess. Two cases of intestinal obstruction required secondary operation for freeing of adhesions, and in one case enterostomy; both resulted in cure. Three unsuccessful attempts were made to close a high fecal fistula in a badly infected case with fatal issue. The other case of fecal fistula closed spontaneously. Exploratory laparotomy for liver abscess was done in one case. Appendectomy was done in one case in which the appendix abscess had merely been drained at the first operation.

In the after-treatment of cases the Fowler position has been used when there has been any suspicion of existing or impending peritonitis. Rectal saline solution is given either by continuous seepage, as recommended by Murphy, or more usually at intervals. Cathartics are shunned during early convalescence, the bowels being moved by enemas only. Cigarette wicks, which are used almost exclusively, are left

when pus is present for seven to eight days undisturbed. I have never seen any trouble from leaving them too long, but, on the other hand, have observed serious consequences from their too early withdrawal. They are never changed while the patient is distended, except as a last resort. After seven or eight days, a fairly firm sinus tract of granulation tissue has formed, and the original wick may easily be replaced by a smaller one of gutta-percha tissue to an equal depth. The gradual shortening of wicks is not practiced. When the discharge has become small in amount the wick is removed entirely, perhaps by the tenth to the twelfth day, depending on the nature of the case. Drainage through the wound, usually at the lower end, with suture of the upper portion, has been found very satisfactory. The occurrence of secondary hemorrhage from the epigastric vessels, which was seen twice in this series, once it was of trifling extent only, might be claimed to be due to the presence of the drain, and urged as an argument against the method. It can be obviated by ligating those vessels in all drained cases, when they are exposed at the edge of the wound. When residual pelvic abscesses occur, as they will occasionally, in spite of all precautions, I wish to emphasize the value of vaginal or rectal drainage. This has been considered in previous papers.[5].

Of the 245 patients who survived the operation, data are at hand as to their condition in 86 cases at the end of one year. There were 4 cases of hernia in the scar; 1 case reported as having a weak scar and 3 bulging. In 4 cases there were inguinal hernias, in 1 case there was double hernia. Two cases had persistent sinuses. One patient had pain in the side and 2 complained of weakness in the side. In the remaining cases the results were entirely satisfactory.

The study of this series of cases has brought out nothing new. It merely emphasizes certain points already familiar, but which perhaps cannot be too often reiterated. The great factor in the mortality of acute appendicitis is delay; delay in making the diagnosis; also to a less degree, delay after the diagnosis is made. A second factor is the practice of giving a purge during the acute attack. There is still need of preaching these doctrines to the laity and the profession. A temperature above 102.5 in acute appendicitis is distinctly rare. In the few cases in which it occurs it is of bad prognostic import. Oehsner treatment has a distinct field of usefulness. The operation in cases involving peritonitis should be directed to removal of the primary focus if accessible, and to securing of drainage with as little disturbance as possible of the general peritoneal cavity. The use of rubber tissue or gutta-percha wicks, rectal saline, Fowler's position, the avoidance of catharsis by mouth, and the leaving of wicks undisturbed, have simplified and safeguarded the after-treatment enormously.

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OBESITY AND MALNUTRITION.*

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Scope of Paper.

IN considering this subject, only what might be called primary obesity and primary malnutrition will be discussed—that is, these conditions occurring as complications or sequelae of other diseases will not be considered.

The two conditions really belong under one heading, as in both the question is simply one of ratio of amount of nourishment ingested to the amount burned up by the bodily activities. The undernourished individual takes too little of the right kind of food, and the fat person takes too much.

MALNUTRITION.

We may, then, consider malnutrition as a condition due to a continued undersupply of nourishment, in either amount or kind. Our type case is a thin, active, nervous, constipated young woman with a poor appetite, often suffering with headaches, perhaps with indigestion, and in some cases having a visceral ptosis. She is usually a wage earner, and has frequently consulted physicians to see if she has tuberculosis, cancer, or some blood disease. She has been given iron, cod liver oil, malt, and Fellow's Syrup of Hypophosphites, and may have been accused of having latent tuberculosis, or, if she has consulted a strictly up-to-date practitioner, intestinal stasis.

Etiology.

The etiology of this condition is primarily a continued undersupply of suitable food, taking into consideration the energy out-put of the patient.

Frequently appetite is variable or entirely absent. In some cases the strenuous life is to be blamed. The patient sleeps in the morning until the last possible moment, hurries through breakfast or omits it altogether, takes insufficent time for lunch, (perhaps imbibing it at the soda fountain), and is so tired at dinner time that she cannot eat and perhaps is not able to digest a "square meal." Social activities may claim time in the evening that should be devoted to rest.

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Ignorance of food values and of bodily needs frequently plays a part, and nature's requirements are neglected with the usual result.

Pathology.

Strictly speaking, there is nothing pathological in these cases. There is simply an insufficiency of adipose tissue, and perhaps a mild anemia.

Diagnosis.

In the type mentioned above we must first rule out all chronic disease. A careful history and searching physical examination, with such laboratory aids as may be indicated, will definitely dispose of all question of tuberculosis, nephritis, syphilis, malaria, the primary anemias, and hemorrhage from a peptic ulcer, the uterus, or hemorrhoids. Careful computation of the daily caloric intake will settle the diagnosis, as a rule.

Prognosis.

The prognosis is good, with proper treatment.

Treatment

The general indications are—to increase the caloric intake and, if possible, decrease the energy output.

1. Study of Case. The first step in the treatment is a careful study of the dietary and other habits of the patient, including the amount and kind of exercise; the number of hours of sleep and, in general, the ordinary daily régime of the patient.

2. Caloric Intake. The next step is to increase the caloric intake. Insist upon a hearty breakfast, whether it is desired or not. Most of our tastes are merely habits, and may be changed with surprising ease, if we persevere. Sufficient time must be taken for luncheon and dinner. Attention must be paid to the caloric value of foods. The patient must be taught to take plenty of butter on bread and vegetables, cream whenever obtainable, and the fatter kinds of meat and fish. Roast beef, for instance, has nearly three times the caloric value of chicken, and mackerel almost exactly twice that of haddock. A glass of milk or a raw egg may be taken immediately after finishing each meal, and on retiring. Luncheons should not as a rule be given between meals, as they lessen the appetite for the next meal.

3. Proteid. Proteid should be given to exceed slightly the amount required to maintain nitrogenous equilibrium—say 70 to 90 grams—as many of these patients are slightly anemic.

4. Drugs. Drugs help in stimulating the appetite and act as general tonics. The bitter tonics and hydrochloric acid before meals are valuable to stimulate the appetite, and iron and arsenic are indicated, if the patient is anemic.

5. Sleep. At least nine hours' sleep should be insisted upon, and if possible a short rest after luncheon and dinner should be taken.

6. Exercise. Only moderate exercise should be prescribed, and that should be taken out-of-doors. Riding and walking are the best forms.

7. Education. The most important factor of all is to teach the patient how to live, as the best results are impossible without hearty cooperation of physician and patient. Under such favorable circumstances, a patient should gain on the average, about one pound per week.

I mentioned above the fairly frequent occurrence of ptosis of the abdominal viscera in this class of patients.

Ptosis, if present, is not necessarily an important factor. Unless there is definite stasis, the condition need not as a rule be considered in treating the case. If the stomach is dilated and does not empty properly, or if there is a prolapsed and dilated caecum, with stasis at this point, the patient does not belong in this class. The x-ray settles this question.

Obesity.

At just what point obesity begins is very hard to define. Without trying definitely to settle this point, we may say that obesity is an increase of adipose tissue beyond the needs of the organism. Fat is stored-up nourishment, and a certain amount is conducive to the best working of the bodily activities. An excessive amount throws extra and unnecessary work on the various organs, both as a dead weight that must be carried about, and as an obstruction to many bodily functions.

Our type case here is a middle-aged person who is gradually reducing his physical activities as his income increases. He takes just as much food, and of a rather richer quality than formerly. He may ride where formerly he walked. Sometimes he takes pleasant but stimulating drinks of high caloric value, where formerly water sufficed. Quite as frequently the patient is of the female sex, but the factors producing the increase in adiposity are the same.

Etiology.

Habitual excess in the ingestion of nourishment, together with lessened physical activity, are the usual etiological factors. Rarely other causes may be found, such as atrophy of the thyroid, with the resulting myxedematous condition; disease of the posterior lobe of the hypophysis,[1] castration, and menopause. Some authorities cite a racial factor, as the Jewish people seem inclined to adiposity, but it is a question if this is not due to habits of eating, rather than to any unusual metabolism. Lastly, some authorities ascribe a perverted metabolism as the cause in some cases. If this is ever a causative factor it may be disregarded in treatment.

Pathology.

Leaving out the question of just where pathology begins, we may describe the conditions resulting from gradually increasing obesity in three classes.

1. In the early stages there is a deposition of fat in the subcutaneous tissues, mediastinum, abdomen, pericardium, between the muscles, and in practically all the bodily tisues.[2]

2. As the supply of fat increases, the muscles, including the heart muscle, become infiltrated and somewhat weakened. The action of the heart and diaphragm are mechanically interfered with, and the result is the so-called fatty heart. New blood vessels are formed to nourish the fatty tissue[3], and the amount of tubing through which the heart must force the blood is increased, thus increasing the work of the heart, and consequently raising the blood pressure[3].

3. As the accumulation of fat continues, there is finally produced a condition of fatty, or fibro-fatty, degeneration of the heart and blood vessels, and skeletal muscles.[4] In these cases the damage done is irremediable. The fat may be removed, it is true, but the damaged muscles, viscera and blood vessels can never be rejuvenated.

Sequelae.

Let us consider briefly some of the sequelae of this excessive accumulation of fat. Respiration is interfered with by the fat above and below the diaphragm, and oxygenation suffers. The heart is embarrassed and its work increased, both by the extra weight carried about by the patient and by the formation of new blood vessels in the fatty tissue. The blood pressure is raised. As the heart becomes slightly incompetent, there develops a congestion of the great viscera, and oedema of the dependent parts, with resulting interference with the capillary circulation. Two of the early signs of heart strain are nocturia (Strauss) and pitting of the ankles on pressure. Many of these patients are "bilious," which simply means that they are overloading their digestive apparatus, and the congested stomach, intestines and liver are protesting.

The congestion of the kidneys is manifested by a slight amount of albumen, rarely with a few casts, which disappears when the congestion is relieved, conclusively differentiating this condition from the chronic nephritis that these patients are so often accused of having.

Arterio-sclerosis may develop as a result of the increased blood pressure[5], and atheroma from the deposition of fat in the musculature of the arteries. In extreme cases there may develop a cardiac cirrhosis of the liver, or chronic interstitial nephritis, from the long continued congestion of the liver and kidneys, or a degenerative myocarditis, due to the fatty degeneration of the heart muscle[6]. Diabetes, gout and a sort of vascular rheumatism, due to the impoverished blood supply of the relatively non-vascular tissues about the joints (Smith), are frequent sequelae. A very common and relatively early complication is a mitral regurgitation, due to a slight dilatation of the heart and a stretching of the papillary muscles or mitral ring. A systolic murmur may often be brought out by a little exercise. In some cases this entirely disappears when the strain on the heart is removed.

A patient with slight dyspnoea, a little oedema of the lower legs, a little albumen in the urine, and a blood pressure too near the 200 mark, is often told by his family physician that he has Bright's disease, and must take a light diet, *i.e.*, he must eat very little meat, and live chiefly on bread, cereals, vegetables, milk and eggs. This is the worst possible treatment, as a diet of this kind still further increases the accumulation of fat, and aggravates the trouble.

Symptoms.

The symptoms of increasing obesity are those of increasing cardiac strain. We may divide the cases into three classes, corresponding roughly to the three classes made in the discussion of the pathology.

1. The first class are those with the early symptoms of heart strain—slight dyspnoea on exertion, noticed particularly on going up stairs, walking up hill, or after any extra exertion, such as running a short distance for a street car. The blood pressure is slightly elevated. These patients acquire an increasing reluctance to the taking of physical exercise, and as the habits of eating are fixed, there is a decided tendency to take on weight still more rapidly.

2. The second class comprises those who have dyspnoea on slight exertion, nocturia, and slight pitting of the shins on pressure, with markedly increased blood pressure. As these patients have a slight cardiac decompensation, with the accompanying visceral congestion, they are apt to be "bilious," and often go to the physician complaining of indigestion. They are sleepy, especially after meals, and apt to be quite averse to physical exercise. Many of them have rheumatic pains about the joints.

3. The third class are those with the marked pathological changes noted above. There is cyanosis, marked dyspnoea on the slightest exertion, perhaps orthopnoea, and cardiac asthma—in short the classical symptoms of a badly broken cardiac compensation, with degeneration of the myocardium. The blood pressure may be high, or if there is much dilatation of the heart, it may be below normal. There may be sugar in the urine, and there will assuredly be albumen, and probably casts. Ascites may be present if there is a cardiac cirrhosis.

I want to emphasize the point that all of these conditions may develop without any other predisposing factor than the strain on the vascular system and great viscera from excessive and long continued obesity. The end result is a so-called cardio-renal complex.

Diagnosis.

The diagnosis of obesity is made with the office scales and measuring rod. Any marked excess of weight for a given height is obesity. The tables used by the insurance companies[7] are useful as average figures, but the build of the patient should be taken into consideration. The large-boned, broad-shouldered type should be allowed more weight for a given height than the small-boned, narrow-chested type.

Prognosis.

The prognosis is good for class 1 and class 2 for an absolute cure, if the superfluous weight is removed. Class 3 may be relieved, but the ultimate prognosis is bad. Very stout patients who have not developed marked symptoms are frequently told by physicians that there is no need of reducing as long as they feel well. This doctrine tends to overcrowd class 3. Any great excess of fat should be immediately removed, before the vascular system and great viscera undergo degenerative changes.

Treatment.

The treatment of any obese patient is an individual and specific problem, and must be prefaced by a careful study of the dietary and other habits of the patient. Chronic disease must be diagnosed or ruled out, as we must vary our treatment according to the presence or absence of chronic nephritis, diabetes, serious heart trouble, etc.

The general indications are:

1. To reduce the caloric intake, and
2. To promote oxidation.

Contrary to the statement frequently made in the text-books, advanced age is not a contra-indication for reduction. There is no age limit that we have to consider in the treatment of obesity[8].

Diet.

Proteids. The amount of proteid given is the first and most important consideration. As the carbohydrates and fats are cut down the proteids must usually be increased to maintain nitrogenous equilibrium. If the kidney function is normal, there is not much danger of a patient taking too much proteid. Chittenden demonstrated that a person of average size may get along on 40 to 50 grams a day[9], but did not demonstrate that 90 or 100 grams is harmful.

Fats. The fats are reduced. Cream and the fat of meats are prohibited. Small amounts of butter and cheese may be taken. The leaner meats are ordered—veal, lamb, white meat of chicken or turkey—and beef, mutton, goose, etc., allowed occasionally for variety.

Carbohydrates. Sugar, pastry and sweets are prohibited, and the patient is encouraged to get over the sweet habit, if he has it. Bread of all kinds is given very sparingly, and the patient is taught to eat in its place potato, and fruits and vegetables of low percentage carbohydrate content. The patient may be assured that if he will adhere strictly to his diet list, he will soon enjoy his food just as well as he did under the old régime.

If the patient is very fat and very oedematous with considerable dilatation of the heart, he should be put to bed for one or two weeks, and be given eight ounces of skimmed milk every 2½ hours, with the whites of 4 to 6 eggs, and some cooked fruit added each day. The oedema disappears in a surprisingly short time, and the weight will drop from one to two pounds daily. Solid food should be given three or four days before the patient is allowed to sit up. On the ordinary diet the patient should lose on the average about two pounds per week.

Drugs.

Drugs are of little use in taking off weight. In some cases small doses of thyroid may be given, but it is a dangerous drug, and should never be given unless the patient is under close observation. Ovarian extract and potassium iodide are not of much use, in my experience. In the cases with cardiac disease, digitalis, and the other heart stimulants are indicated just as in any patient. Cathartics should be used with judgment. Violent catharsis is never indicated. Patients with oedema may be given moderate doses of the salines with benefit. Patients without oedema need no cathartic if the bowels move daily.

Exercise

Most of the obese patients should take very little exercise. If we remember that all of these patients have overtaxed hearts, we shall see the logic of limiting their exercise until at least part of the superfluous fat is removed. When the heart becomes entirely compensated light exercises may be prescribed.

Baths and Spas

A cool sponge bath with a brisk rub down should be taken on arising, and a tepid bath on retiring. These act as mild vascular stimulants, and promote oxidation. Spas are never indicated for therapeutic reasons. The same, or better, results may be obtained at home. "Boiling out" at the hot springs, or the vigorous catharsis at the sulphur springs, are not important factors in reducing adiposity. The spas that obtain good results in these cases have a carefully regulated regimen of diet and exercise, which is the important factor.

In General.

There are some general considerations that I wish to mention in the treatment of these cases.

Hypertension.

I have already mentioned the effect of adiposity on blood pressure. The increased weight carried by the patient, the formation of new blood vessels in the fatty tissue, the mechanical interference with the heart and diaphragm, and, in cases with oedema, the interference with the

capillary circulation, seem to be the main factors in imposing extra work on the heart, and hence the immediate causes of the hypertension. As these causes are removed, the blood pressure falls as a matter of course. If it does not fall, there is present some trouble other than obesity —chronic nephritis being the most common one.

Individual Treatment.

Each patient must be considered as an individual. There are no general rules that apply to all patients. Careful study of the case, and an intimate knowledge of food values[10] and general metabolism, are indispensable factors in successful treatment.

Every patient should be supplied with a written list of instructions, and the lists should always be made as liberal as is possible under the given conditions.

Psychic Factor.

The psychic factor must not be neglected. Get the patient to make a fad of following instructions to the letter.

Lastly, when things don't seem to be going right, find the reason—there always is one.

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THE RELATION OF ALCOHOL TO ACCIDENTS.*

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THERE are about 40,000 patients treated each year at the Haymarket Relief Station. These patients come from the emergencies arising in three general groups. There is the Industrial Group, the Transportation Group and the Residential Group.

The Industrial Group, in a general way, includes shops and manufacturing. Here, in the heart of Boston, there are no groups of factories such as are found in Lynn and Brockton. There are no groups of mills such as are found in Lowell and Lawrence. But there are many separate shops and factories. Numerous candy factories, tailor shops, metal-working shops, etc., are in the district covered by the hospital.

The carriers comprise the Transportation Group. These are the elevated, surface and subway railways, railroads, waterborne transportation, both freight and passenger, and the street traffic. The district covered by the Relief Station extends from Sullivan Square, Charlestown, to, and beyond, the new Commonwealth Docks in South Boston; and from Park Square to the North End waterfront. During each working day there are over 600,000 people in this district. The South Station handles 200,000 passengers each working day; the North Station handles 100,000; the Park Street Subway handles 96,000; the Sullivan Square Station handles 130,000 each working day. There are ten miles of busy waterfront in this district, with numerous steamship lines. The Boston harbor excursionists numbered 1,086,000 passengers in 1912. One harbor steamship line alone carried almost 900,000 passengers that year.

The transportation on our city streets, whether motor, horse drawn, or foot passenger, moves under the disadvantages and dangers attendant upon congestion in narrow, crooked streets,

Under the Residential Group are included the homes. These vary widely. Beacon Hill, North End, Chinatown, and Charlestown all lie within the district. Other hospitals care for some of the emergencies, but the Haymarket Relief Station cares for most of them.

With this brief survey of the scope of our field, we can now consider the relation of alcohol to accidents as it has come under our observation.

It may be stated, based upon our experience, that:

a. Alcohol causes accidents.
b. Alcohol obscures the diagnosis.
c. Alcohol increases the danger of infection at the time of the accident.
d. Alcohol prevents adequate treatment.
e. Alcohol increases the danger of intercurrent complications.
f. Alcohol retards the process of repair.
g. Alcohol gives a poorer end result.
h. Alcohol increases the mortality in accidents.

a. Alcohol causes accidents.

Under the influence of alcohol, a man falls on the sidewalk, or from a wagon, and injures himself. The probability is present, but extremely small, that he would have so injured himself if he had not been under the influence of alcohol. A longshoreman improperly slings a package of merchandise which falls and injures himself or his workmates. A carpenter improperly fastens a scaffolding which collapses and injures himself or a person passing by. Again, a teamster or a chauffeur, while under the influence of alcohol, injures himself or others in the highway. The intoxicated person turns off the gas in the bed room, then accidentally turns it on. Gas poisoning, explosion or fire follows.

* Read at the annual meeting of the Massachusetts Society of Examining Physicians, Boston, Dec. 19, 1914.

b. Alcohol obscures the diagnosis.

When certain types of injury are suffered by a patient while under the influence of alcohol, it is impossible to make a full diagnosis until the effect of the alcohol has passed off. With contusions of the head producing concussion or contusion of the brain or other intracranial injury, it is impossible in the presence of alcohol to localize or to estimate the extent of the injury. Fractures of the skull associated with alcohol present the same difficulty.

Abdominal injuries are obscured by alcohol. Beginning peritonitis from perforated gastric ulcer or from ruptured abdominal viscus cannot be discovered at once. Three different patients were brought to the hospital days after an injury received while intoxicated, suffering from ruptured bladder. Each was moribund at entrance. Autopsies showed that the condition might have been easily relieved surgically if seen early. The intoxication had obscured the condition.

Alcohol obscures the diagnosis where poison has been taken either accidentally or designedly. Such poisons as would give a distinct odor to the breath may be covered up by the odor of alcohol, and their effects are obscured by the same agency.

The diagnosis of deep-seated trauma of joints or muscles is always obscured to a degree by alcoholic intoxication.

c. Alcohol increases the danger of infection at the time of the accident.

When a man is intoxicated, he does not take proper care of his wound. In his stuporous or irrational attempts to aid himself, dirt and infection enter the wound; or he breaks the skin over a fracture and thereby changes a simple injury into a dangerous one. For example: a drunken man walked about with a compound fracture of the ankle which had the bones protruding through the flesh. He had been walking in the street in that condition.

The intoxicated person permits great blood loss which weakens vitality and makes infection easier.

Another example is that in which a teamster under the influence of alcohol, steps on a rusty stable nail, takes no care of what the ordinary man in his senses would know to be a possible serious accident. Later, infection and maybe tetanus develop from a neglected injury.

d. Alcohol prevents adequate treatment.

Intoxicated persons do not realize the necessity of proper cleansing and suturing of wounds. They do not realize the necessity of proper reduction of dislocations, and reductions of fractures. They do not realize the necessity of proper operations to discover or to repair injuries. Hence, they do not permit the best treatment. No surgeon wishes to assume the legal risk of operating upon an unconscious or upon an irrational patient; therefore, the case waits and receives palliative treatment only until the patient is sober or until consent for operation is obtained from the proper authority. This interval of delay is often enough to turn the scale against the patient. One case that we recall on this point is that of a man who received a compound fracture of the humerus while drunk. He refused proper treatment and by his own actions made a serious matter worse. He spent over a year in an acute hospital, most of the time in bed and all of the time in pain. He had seven operations under ether and finally got an atrophied, weak arm, when all the humerus had been removed.

Alcoholics cannot or will not swallow drugs as antidotes for poison or for purposes of stimulation. Many alcoholics are quarrelsome and restless. Many persist in undoing the work which the surgeon does for them. They remove plaster casts, or remove splints; they will not tolerate rectal-saline. They hurt themselves in their efforts to get up out of bed, thereby causing secondary injuries to the already injured tissues. They dislocate again the fragments; they tear open the wound, whether such wound is accidental or operative. Until the patient is out from under the influence of alcohol, treatment may not be begun, and certainly cannot be maintained, if such treatment involves uncomfortable or unusual positions or unusual surroundings.

e. Alcohol increases the danger of intercurrent complications.

The injured alcoholic in the wards or at home is far more likely than the sober man to have intercurrent complications. He is far more likely to have secondary hemorrhage, refractures, displacements of fragments. The alcoholic whose vitality is already low by over-indulgence in alcohol, when attacked by what would be an ordinary bronchitis, speedily develops an oedema of the lungs or pneumonia when confined in bed. The alcoholic frequently cannot tolerate necessary feeding, because of alcoholic gastritis. Therefore, the vitality of the patient suffers because proper food cannot be given.

Delirium tremens is a frequent accompaniment of fractures in alcoholics. There may be present only an oedema of the brain, which leaves the patient just irrational enough to attempt movements with the broken bone, or wish to sit up when he should lie still, or to seek to change apparatus which should not be disturbed. Or, the delirium may become so violent that all proper apparatus must be removed, and the patient treated solely for the general condition and at the expense of the local condition. The local results obtained in such cases are not good. Those alcoholics who, because of a small accident are confined to bed, frequently develop pneumonia. With the delirium due to alcoholic oedema of the brain, comes the delirium due to the pneumonia. A delirium tremens patient who develops pneumonia has about 17 chances in 100 of getting well by the ordinary hospital

method.† This is not surprising when we consider that those who develop delirium tremens are exhausted and poisoned from the use of alcohol even before they are called upon to combat the toxins of pneumonia. Such patients are likely to keep on their feet until they collapse or are injured.

Accidents that would be trivial, or not especially serious of themselves, become extremely grave because of the pre-existing condition of the patient. In the case of the chronic alcoholic we find the conditions favorable to cause trivial accidents to terminate fatally.

f. Alcohol retards the process of repair.

Any surgeon who has had experience in a large general hospital recognizes that accidental or operative wounds do not heal so quickly nor so well in the alcoholic as in the clean non-alcoholic adult. This retardation of repair is especially marked in injuries to the bones. It is fair to say that the hard drinker takes about 20% longer time to make repair from fractures of the large bones than the non-drinker takes for a similar injury. Lack of proper reduction and fixation where the patient is likely to develop delirium tremens or any grade of the same also causes retardation. One cannot apply proper splints to save severed tendons or severed muscles and cannot maintain the part in fixed unusual positions, when the patient is likely, thereby, to be irritated into an attack of delirium. The surgeon cannot keep the patient quietly in bed for the sake of the injury if the patient's general condition demands that he be sitting up or walking about. Therefore, the process of repair is delayed in starting and the process of repair is slowed down because of the toxic condition of the hard drinker. One must treat the general condition first, then the local condition; whereas in the clean adult, one can attack the local condition at once and adequately.

Because of longer periods of fixation of extremities and of longer periods spent in bed treatment, a greater amount of muscle atrophy and a lessened amount of joint mobility certainly appear. As both of these conditions require time and perhaps manipulations to overcome, they retard the convalescence.

g. Alcohol gives a poorer end result.

Because of delayed primary care of the injury and of deferred adequate treatment, time is lost and the risk of complications is increased. Because the physical condition of the hard drinker is already poor from gastritis or cirrhosis of the liver, or nephritis, etc., the shock and the stress of the accident bear harder upon him than upon a teetotaller. Because the duration of repair is lengthened in the alcoholic, more time is lost.

After the acute phase of the injury is over, and the patient has left the hospital, he seeks to recover his strength in order to go to work. In this period the patient, who has necessarily been abstinent during the acute phase of his injury, is quite likely to over indulge in alcohol during the convalescent period. He takes a drink to "strengthen" himself, or to relieve his discomforts. This is dangerous for him, and frequently leads to partial or to complete reinjury. For, being in a weakened condition from confinement and from injury, he cannot stand anywhere near his usual potation. If he attempts it, he becomes intoxicated.

The effect of heavy drinking upon a healing wound is very noticeable. Wounds that have almost healed break down and open again. Open wounds increase their discharge, while the edges of varicose ulcers, etc., seem to melt away. Some of this condition is due to the improper strains or to neglect of person or to exposure to which the drinking man subjects himself. An ordinary man lightens his work if he has a pain in a recently healed bone, or about an injured joint; but an alcoholic takes a drink for the same condition and goes on. An ordinary man protects his wound following a partial recovery, but an alcoholic takes a drink and forgets about it. This tends to make the injury chronic. Therefore a poorer end result certainly follows. We get a 60%, 70% efficiency of the part following the injury where we have a right to expect 80% or 90% efficiency with the resources at our command, and the treatment we are able to carry out if conditions permit us to do so.

h. Alcohol increases the mortality in accidents.

By obscuring the diagnosis, alcohol defers proper treatment. This delay diminishes the patient's chance for life when the real conditions are discovered. By increasing the risk of infection, or by neglecting the beginning of the same, a condition is permitted to arise which aggravates the injury and lessens the chance for life.

Alcoholics do not bear surgical shock well. After traumatic amputations and severe lacerations, a longer time is required to bring them back to an operable condition. This necessitates deferring urgent operations. Alcoholics do not live so long after being injured as abstainers do; which is another way of saying that their vitality is less.

The records of the Haymarket Square Relief Station for the year 1911 show that there were 199 patients who died there. Of these deaths, 19 were patients under 21 years. Of those adults who died as the result of accident that year, 38.2% were under the influence of alcohol when they entered the hospital. Of those adults who died by disease that year, alcohol was noted in 36.3%.

In the summer of that year there were 1,082 cases associated with heat, treated here. It was very noticeable that the chronic alcoholics were more prostrated and had a higher mortality than the abstainers.

† In fifty-three cases of delirium tremens patients who developed pneumonia, forty-four patients, or eighty-three per cent., died. This was over a four-year period at the Haymarket Relief Station.

In the year 1912, there were 191 deaths, of which 168 were adults. Of the adults who died because of accident 33% were under the influence of alcohol when they entered.

In the year 1913, there were 169 deaths, of which 158 were adults.

Of the adults who died because of accident that year, 48.4% were under the influence of alcohol when they entered.

In the year 1914, there were 132 deaths, of which 110 were adults.

Of the adults who died because of accident that year, 43% were under the influence of alcohol when they entered.

Practically all the severe accidents seen here are fresh,—minutes old, usually. So that, if alcohol is present at entrance to the hospital, it was present at the time of the injury. Great care is exercised to exclude doubtful alcoholic diagnoses and cases in which alcohol was given subsequent to the injury. No such cases appear in the above statistics. Nor is alcohol noted down in all the cases in which it is present. It is noted down only when, being present, it requires treatment or enters into the estimate of the rationality of the patient. It is not entered in the records for statistical reasons, but solely for purposes of treatment.

Many cases are gravely injured or moribund at entrance. The presence of alcohol under such conditions is an unimportant detail, and would be of no service in the treatment. Thus it happens that alcohol is not mentioned in the records even when we are sure it is present.

Not all the injured received here who die from their injuries die in this hospital. They are kept in the Relief Station only long enough to permit their safe removal elsewhere for further treatment. Thus many patients die from their injuries after they leave here. Such deaths do not appear on our records at all.

From these facts, it can be seen that the number of those who are injured while under the influence of alcohol, and who die because of their injuries, is much larger than our records would show. From the records, however, we can say that 40.6% of those adults who died here from accidents during the past four years were distinctly alcoholic at the time of the injury.

ACIDOSIS IN CHILDREN.*

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The literature credits Nauyn as being the first to clearly describe the condition of acidosis as being the result of the pathological production of acids in the course of metabolism.

Pfaundler and Schlossman credit Giliberti with the term recurrent vomiting.

The earliest reported case of recurrent vomiting was made by Dr. Cuiere in 1841.

Dr. Gee of London in 1882 contributed the first paper in English on the subject, reporting nine cases. Von Jaksch in 1883 is said to have been the first to demonstrate acid substances of the acetone series in the urine (in diabetic urines). Recent literature by writers of various nationalities abounds in articles on the subject of recurrent vomiting.

In the literature and pediatric text-books the attention given the subject of acidosis is confined largely to a consideration of recurrent or cyclic vomiting. A great deal is said, with wide differences of opinion, about the possible etiology, but the practical clinical aspect of acidosis it seems to me has not received the attention which it deserves.

The number of infants and children coming under my observation in which acidosis has been accompanied by severe clinical symptoms has impressed me more and more strongly with the seriousness of this condition, and the practical importance of its recognition and treatment. I wish to distinguish this type of case from the cases giving a test for acetone without clinical symptoms so frequently met with in febrile conditions. In the last two years I have seen 64 cases of acidosis. Of the last 171 consecutive patients seen, ranging in age from one day to twelve years, irrespective of the reason of the visit, 31 have had a definite acidosis. These cases include only cases in which there was marked clinical evidence, as well as an acetone odor to the breath, and a positive test for acetone in the urine.

Sex did not seem to play an important part in this series. Of the 64 cases, 30 were male and 34 were female.

As regards age, my experience has differed from most writers in that the cases seen under two years have been about as frequent as those seen over that age. Of the last 31 cases 20 were among 103 babies under two years, 11 being among 68 children from two to twelve years. The youngest cases seen were a baby four days and 2 babies five days to one week. The oldest cases were a boy ten years and a girl twelve years. Some of the cases seen with a first attack when less than two years old, have been seen with a subsequent attack at an older age. Classified by attacks instead of cases, there is a more definite predominance in favor of the age above two years.

As regards environment, my impression is that although acidosis is more common among children living in good circumstances, it is far from being confined to that class.

Again, as regards temperament, rheumatic tendencies, etc., although many of the cases have been in families or children of a nervous type, or

* Read at a meeting of the New England Pediatric Society, held January 29, 1915.

showing at some time evidences of the rheumatic cardiac, choreic tendency, there have been many exceptions.

The next point which I wish to make is, that while it has been my experience that acetone acidosis in childhood is of frequent occurrence, the common clinical type met with is what might be called a complicating acidosis with obvious predisposing factors. While the recurrent vomiting of the text-books, as distinguished by absence of obvious predisposing or causative factors, is extremely rare if, indeed, it exists. Of the 64 cases in this series, but one case had attacks except as the result of demonstrable complicating or predisposing causes. That the one case which failed to show clinical evidence of these causes had, nevertheless, sufficiently definite predisposing etiological factors, is very clearly shown from the following brief summary of the cases.

L. Female of 6 years. Past history: full term, no feeding troubles. Severe intestinal indigestion at 3 years. Measles at 4 years. Seen August 2, 1913. Perfectly well until 3 days previous had loss of appetite, nausea, vomiting without change in diet or obvious illness. Bowels had moved daily. The child showed an acetone breath and acetone, plus diacetic acid in the urine. Had similar attack in December, 1912; June, 1913; July, 1913. Vomiting not present each time but "peculiar breath" and distaste for food. Confined to bed each time from 3 to 5 days. Diet: Unusually good; mother very intelligent and extremely careful in regulating life of patient, who was an only child. Child made good recovery and August 5 child seemed perfectly well. August 15 child had another attack. This attack similar to previous attacks and ran the same course until August 17; child had slight temperature, increasing gradually to 102. Previously normal to 100. Also very slight muscular spasm over appendix region. Child operated on that night. Operation disclosed two enlarged mesenteric nodules with band of adhesions compressing ilium to 1/3 calibre just above cecum and causing slight torsion of the ilium. Nodules removed, adhesions broken up and appendix removed. Pathological report stated mild catarrhal appendix, with no evidence of previous involvement. Mesenteric glands tubercular. Child made good convalescence. Has had splendid health and no subsequent attacks since operation 18 months ago.

The essential features of this case are strikingly similar to the case reported by Dr. W. S. Parker at the last meeting of this society, Dr. Parker's patient being a supposed recurrent vomiter, which Roentgen rays and bismuth meal and operation showed had stasis and general visceral ptosis. It is significant in this connection, it seems to me, that the various writers on the subject of recurrent vomiting differ so widely in their theories as to the etiological factors. Is it not possible that this diversity of opinion suggests a diversity of, let us say, predisposing etiological factors?

My own experience and a consideration of the literature leads me to believe that recurrent vomiting without demonstrable cause is sufficiently unusual to indicate an extremely careful study of apparent cases for various possible predisposing causes.

It has seemed to me evident that there are many pathological conditions which are capable of precipitating an attack of acidosis.

Acute infections have been the most frequent complicating conditions in the acidosis cases coming under my observation. The site and apparent severity of the infection has not seemed to be of consequence in the production of, or severity of the acidosis. Tonsillitis, coryza, bronchitis, otitis media and infectious diarrhea have in the order named been the most frequent infections preceding an acidosis. Among other conditions noted have been intestinal stasis, intestinal intoxication, diarrhea, burns, difficult teething and acidosis following etherization and operation.

In some cases, as the result of the disease that preceded the acidosis, the child was apparently but mildly ill, with little or no elevation of temperature; in other instances severely ill with a temperature of moderate or severe degree. The acidosis that developed was as likely to be as severe in one case as in the other, mild in both instances, or develop in the case of the severe illness after the temperature had subsided and the patient was apparently convalescent.

That more than one factor may combine in causing an acidosis is suggested from the fact that a child known to be subject to acidosis may have an attack brought on by a cold when he is constipated. The same child may escape an attack repeatedly when suffering from a cold alone or when constipated and having no infection. Again, a baby having difficulty in teething over some little period, with more or less accompanying digestive disturbance, may escape an acidosis until he has an acute infection or becomes constipated. A child having a tonsillitis may recover from the attack, having a definite period of quiescence, have tonsillectomy performed and suddenly develop a severe acidosis. In other instances I believe that a moderate acidosis existing before operation is overlooked, and bad results in the way of collapse, etc., are encountered because of the presence of the acidosis.

Constipation has been the rule in a majority of the cases, the usual story being that the child's bowels had been regular until a day or two previous to the onset of the acidosis they became costive. That the constipation is not the only factor is indicated from the fact that the same child may have other attacks of constipation more marked than the one accompanying the acidosis, without an attack. Also some of the cases in this series developed an acidosis during the course or at the onset of a diarrhea or infectious diarrhea.

Certain children are apparently predisposed to acidosis, having repeated attacks from what are clinically slight predisposing causes. Of the 64 cases, 22 either have been seen in more than

one attack or give a definite history of repeated attacks.

That this predisposition is but a part of the story, however, seems evident from the fact that these patients often escape an acidosis when ill with the same disease that at other times has accompanied an active attack.

Again, of the 42 cases seen in one attack showing that they are capable of having an acidosis, not only do they fail to give a history of previous attacks, but some have been under observation for from one to five years without acidosis accompanying various infections and digestive upsets.

It would seem that the clinical evidence favored the view that these different conditions were capable of acting as predisposing factors to an upset in metabolism other than indigestion.

The clinical picture presented by this series of cases has shown marked variations as regards the onset, progress, severity and manifestations of the attack.

The usual development of the acidosis is a progressive one, with marked variations in the rapidity of the appearance and duration of the symptoms.

There are usually slight premonitory signs, such as loss of appetite, restlessness, irritability, or, if the child has been apparently convalescent from the accompanying disease, it seems suddenly not quite as well. Progressively, the mouth and lips become dry and slightly reddened, there is abnormal thirst, increased excitability, an acetone odor to the breath, acetone in the urine, the respiration becomes more rapid and the child may have nausea to the extent of a positive distaste for food or violent vomiting may suddenly develop at this time or may be the first definite manifestation.

As the acidosis increases the patient changes from its irritable, excitable or hysterical condition and becomes listless, drowsy and apathetic. The slightly flushed face assumes an anxious appearance and the eyes look sunken; when disturbed the child is fretty and irritable, but soon drops off to sleep again, becomes more dull and hard to arouse, and then becomes unconscious. During this period the breathing becomes more rapid, shallow and irregular. The child sighs frequently, and the irregularity of the breathing may be of the Cheyne-Stokes type. In very severe or fatal cases the coma becomes deep, the breathing more irregular and shallow, the cyanosis more marked and the pulse, which has been moderately slow, quickens in rate and becomes of poor quality.

In 51 of the 64 cases vomiting was a symptom of greater or less severity. Of the 13 instances in which vomiting did not appear, treatment was begun at the first indications of nausea or as soon as the acetone odor to the breath and acetonuria were noted, accompanied by increasing irritability, rapid respiration, etc. In some cases where vomiting was present as an early manifestation, it ceased after the acidosis more fully developed. In other instances vomiting did not occur until late in the course of the attack, when the patient showed marked intoxication. Certainly in a majority of cases, however, the vomiting not only developed early but was most marked in the early stages of the acidosis.

The severity of the acidosis apparently varies considerably in the same patients in different attacks. Also it seems evident that certain children are more likely to have violent symptoms and a protracted course with each attack than is the course with other children.

The signs and symptoms of the accompanying diseases tend still further to vary and complicate the clinical picture in these acidosis cases. The most difficult interpretations to make that I have encountered have been to differentiate between the prostration and apathy of an intestinal intoxication or the toxicity produced by an acute infection, in contradiction to the apathy and unconsciousness of an acidosis when both conditions are present at the same time. For example: A girl of two years, giving a story of vomiting once or twice during the first day of illness became increasingly dull. She was seen on the fourth day in a semi-conscious condition with considerable prostration. Acetone breath and acetone urine were noted. The stools from the first had been rather frequent, green in color, with some mucus following cathartic. Soda bicarbonate and glucose solution were given, with child showing complete return to consciousness in 24 hours. Prostration and general condition did not show any marked improvement. Second day after the child's mental condition had cleared, blood and pus appeared in the stools and the child ran a fairly severe course of infectious diarrhea.

I wish to emphasize in this connection the importance of the early recognition and treatment of acidosis on the basis of its being a serious complication. In nearly every case of acidosis seen in consultation, where the acidosis had not been noted, the reason for the consultation was that the child seemed more ill than the physical signs of the recognized disease warranted. An untreated acidosis accompanying a mild illness is likely to produce a pretty sick and uncomfortable patient, with the results of treatment of the recognized disease far from satisfactory. An untreated acidosis or one that is well developed before treatment is begun may, I feel sure, in a severe illness be the real cause of a fatal outcome.

Among the 64 cases considered there were 3 fatalities. Two of the three were from clinical evidence not justified by the illness uncomplicated by acidosis. The third case, a moderately sick pneumonia in a girl of three years, which involved but one side of the chest, developed an acidosis on the fourth or fifth day after the onset of the pneumonia. The acidosis was untreated for at least 36 hours. Had the acidosis been recognized and treated it would seem that

the child might have successfully coped with the pneumonia.

From the standpoint of getting results in the treatment of a disease, as well as the more serious consideration of the added danger, the recognition of a complicating acidosis warrants prompt attention and adequate treatment. Even if the symptoms accompanying the presence of an acetone breath and acetone urine are extremely mild, and regardless of whether or not acetone is normally present in the urine in small quantities or is frequently present in febrile conditions without clinical symptoms, it seems to me that treatment is indicated; first, because we do not know how suddenly severe and serious symptoms may develop, and, secondly, because the early treatment is much more simple and effective.

Because of the bad results frequently encountered following etherization and operation when acetone is present, acidosis is of special practical importance to those performing even minor surgical operations.

It is beyond the scope of this paper and the knowledge of the writer to enter into questions of the actual production of acidosis or consider what members of the acetone group are most active in the production of the intoxication, or speak of the possible part played by carbon dioxide in the production of the symptom complex of acidosis. These are problems that deserve active consideration and investigation, as a better knowledge along biological-chemical lines should prove of value in directing treatment and instituting prophylactic measures. From a purely clinical point of view it seems probable that acidosis is a definite result of faulty metabolism, induced by numerous predisposing etiological factors, acting singly or collectively.

The treatment of acidosis in the absence of more accurate knowledge, should be directed toward neutralizing the acid intoxication, alleviating its symptoms, and removing, as far as possible, predisposing conditions. The patient should be placed in bed and kept as quiet and free from excitement as possible, the intestines should be promptly and thoroughly emptied. Even in the absence of vomiting, it seems a rational proceeding to stop all food, including water, until medication has been continued for a few hours. If vomiting is present even liquids, except in extremely small quantities, should be withheld until it stops. The combined use of soda bicarbonate and glucose has in my experience been more effective than the bicarbonate alone. If the acidosis is at all severe the first doses of soda should be fairly large and given at frequent intervals. A convenient plan is to give the soda every two hours, alternating with glucose. The medication is to my mind much more effective when given by mouth. The fact that the child is retaining nothing—even water being regurgitated at once—does not indicate that the medication cannot, in the majority of cases, be successfully given by mouth. If absolutely nothing is given by mouth for a few hours except teaspoon doses of the prescribed medicine, the child experiences difficulty and a rapidly declining inclination to regurgitate the medicine. In many cases one, two or no doses are lost. After medication has been given successfully two or three times the child will usually retain water in teaspoon doses or be able to suck cracked ice without vomiting. Food should be started with caution, both as regards quantity and composition. I have found a barley lactose solution a convenient stepping-stone for both babies and older children. Fair amounts of carbohydrate, moderate proteids with gradual introduction of fats, have proved satisfactory in increasing the diet of the babies and older children.

As a prophylactic measure in children with repeated attacks of acidosis, I have secured good results by having the mothers start acidosis treatment, including cathartic, soda bicarbonate and light carbohydrate diet, at the first indication of the onset of any illness. In some instances even with this treatment, the child has developed mild evidences of acidosis, but in no case a severe attack, the vomiting being either entirely avoided or very mild in character and of short duration.

The principal points which I wish to emphasize as a summary are:—

1. That acidosis in children is of frequent occurrence.
2. That recurrent or cyclic vomiting, as distinguished by absence of predisposing factors is extremely rare. Cases apparently of this type should be subjected to careful study for possible concealed pathological conditions.
3. That the common clinical type of acidosis is what might be termed a complicating acidosis with predisposing factors.
4. That clinically there are numerous conditions which seem capable of acting as predisposing etiological factors in the production of an acidosis.
5. That acidosis should be considered a serious condition.
6. That the early recognition and treatment of acidosis is of practical clinical importance.
7. That prophylactic measures are indicated and practical.
8. That a more thorough understanding of the biological-chemical processes producing acidosis should prove of real value in the scientific treatment of the disease—which should be considered of definite clinical importance to both general practitioner and pediatrician—acidosis in children.

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THE PARENTERAL ADMINISTRATION OF HORSE SERUM IN CASES OF HORSE ASTHMA.*

BY J. L. GOODALE, M.D., BOSTON.

IN January, 1914, I reported a series of cases of horse asthma and horse fever, and described the local skin manifestations occasioned by the application of horse serum to a scratch. Since then additional cases have come under observation, which have confirmed the previous results with reference to skin reaction. In the following paper I wish to describe some attempts to effect a resistance in such patients to the neighborhood of horses by the parenteral administration of horse serum.

The results obtained in conditions of proteidization to other proteids have been so encouraging as to suggest the probability of their attainment in these instances of horse fever and horse asthma. It remains, however, to be determined whether the internal administration is practicable, or whether the serum is best administered subcutaneously. In two cases an attempt was made to immunize the patient against horses.

CASE 1. The results obtained in this case are merely placed on record without attempting to draw conclusions, as the evidence appears to be inconclusive. The previous history of this case appears in my paper "Studies Regarding Anaphylactic Reactions Occurring in Horse Asthma and Allied Conditions"[1] as Case 2. The essential points are here reproduced: "Mrs. B., 30 years old. For ten years the neighborhood of horses has produced sneezing, more severely of late, and accompanied by a sense of constriction in the chest. The general health is otherwise good. Horse serum applied to a scratch on the skin produced in six minutes considerable reddening and edema without the marginal white line of the preceding case. In the nose the serum gave no result. On the following morning the skin test was repeated with the same serum, without exciting any local reaction whatever."

The patient was then given one-tenth of one per cent. solution of horse serum to spray into the throat once daily, increasing at the end of two weeks to a one per cent. solution. The spray produced little or no subjective discomfort, at least no symptoms beyond occasional difficulty in breathing were noticed. Six months later the patient reported, saying that she had used the spray about a month, and that she felt considerable increase in her resistance when in the neighborhood of horses. A test of the serum on the skin produced no reaction. The evidence seems to me here too scanty to justify conclusions.

CASE 2. Miss W. Reported in the same paper as Case 1. Essential data here reproduced. Twenty-eight years old. Asthma more or less constant throughout year, increased in the neighborhood of horses. "Has been under observation for six years. A large cystic right middle turbinate was removed in 1909 without influence on asthma. Tonsils were removed for septic detritus four years ago. During past two years asthma has been much less troublesome, and she is able to drive behind horses, although the air of stable excites an attack."

The skin test gave a marked reaction. Attempts to accomplish an increase in resistance by spraying a ten per cent. dilution of horse serum had to be given up, owing to the supervention of severe asthma, but on resuming the serum spray in dilution of one to a thousand, it was possible to effect apparently an increased resistance, both to the neighborhood of horses, and to the reactions occasioned on the skin by the serum. Six months later the patient was again examined, as her asthma had become more severe, both in the neighborhood of horses, and also at other times without assignable cause.

The patient was again tested on the skin, and showed a highly developed degree of sensitization. The horse serum, obtained from the Massachusetts State Board of Health, in the form of diphtheria antitoxin, showed in 50% dilution, an edema of over one inch in transverse diameter, with hyperemia nearly encircling the arm, and accompanied by intense itching.

It was decided now to inject the serum subcutaneously, and tests were consequently made, with varying dilutions of serum. Numerous tests were made to determine the best preservative and diluent. Alcohol in fifteen per cent. dilution proved thoroughly efficacious, preserving the antitoxine from decomposition without precipitation of the albumin. It is interesting here to note that this alcohol concentration corresponds to that which can be attained by the development of saccharomyces in a sugar solution. Different dilutions were, therefore, prepared with alcohol in water, ranging from a one per cent. to a one in ten thousand, in all of them the alcohol being present in the preparation of fifteen parts by volume.

When these solutions were applied to scratches on the skin of the arm, a 1/100% dilution produced a slightly raised white area of edema about 1/8 inch in width; a 1/10% dilution showed edema one-half inch broad, with a narrow margin of hyperemia; these not being accompanied with itching; a 1% dilution showed extensive edema, marked hyperemia and itching. The patient was first injected two days later, Nov. 12, with ten minims of 1 to 10,000 dilution of serum. Nov. 14 the patient received 10 minims of 1 to 1000, and every two or three days serum in increasing doses. On the 20th, 4 minims in a 1% dilution were given. The skin reaction at this time showed a small moderate reaction, with a 1% dilution. Nov. 30 two minims of a 50% solution produced a moderate edema of the skin, without hyperemia or itching. The strength of the injections was increased until on the 11th she received 4 minims of a 50% dilution. At this time this dilution of serum caused slight hyperemia, and an edema of less than one-half inch in diameter.

The injections caused no discomfort or subjective sensations, but were followed in the course of two

* Read at a meeting of the New England Pediatric Society, held January 29, 1915.

[1] Annals of Otology, Rhinology and Laryngology, June, 1914.

hours by considerable firm, deep-seated edema in the vicinity, nearly embracing the arm, persisting for six or eight hours longer. The injections have been continued at weekly intervals for a period of two months (at the time of writing), each injection consisting of 10 minims or a 50% dilution of serum. Following each injection in the upper arm, a moderate edema appears immediately, increasing in the course of three or four hours, and causing an enlargement of the arm to about twice its normal circumference. The swelling is firm, elastic, without pain, tenderness, itching or hyperemia of the skin, and disappears in six or eight hours. During the last month, the size of this swelling has diminished slowly and progressively, from an original size of approximately a hen's egg, to now a size of a pigeon's egg. The introduction of horse serum into the nose causes no discomfort or vasomotor symptoms, which were so marked originally a year ago.

The patient's statements regarding horses are to the effect that she has no asthma when in their neighborhood, but that close proximity causes sneezing. Attention should in this connection be drawn to the fact that horse fever, *i.e.* sneezing, etc., caused by horses, may not show an anaphylactic skin reaction from the application of horse serum.

Summary. Consideration of the objective phenomena shows that this case with a high initial sensitization to horse serum has acquired in the course of thirty injections of progressively increasing doses of serum a determinable increase in resistance. This resistance is characterized by failure of the serum to excite hyperemia and itching when applied to the mucous membranes or to a scratch of the skin, although edema can still be produced by hypodermic injection.

Clinical Department.

GANGRENOUS EPIPLOIC APPENDIX.

REPORT OF A CASE.

BY A. R. KIMPTON, M.D., BOSTON.

THE object of the following case report is to call attention to one more condition that may be encountered when operating for what is thought to be acute appendicitis. Not uncommonly patients have been operated upon for what appeared to be appendicitis, the appendix removed, and nothing further abnormal has been found in the abdomen. The pathologist returns a report of a normal appendix, and the surgeon frequently feels that something has been overlooked.

A man forty-two years of age was seen by myself at midnight for acute abdominal symptoms. For thirty hours he had been having pain in the lower right quadrant, which had been increasing. For the past four or five hours he had been having hot fomentations, with but slight relief. When seen by myself the patient had a great deal of nausea, almost to the point of vomiting. He had had one or two similar attacks which had been of very short duration. Bowels had been regular.

The physical examination showed the patient to be very obese. The heart and lungs were negative, temperature was 98.8, and pulse was 80. The lower right quadrant showed moderate rigidity and spasm with very marked point tenderness. With increasing symptoms it seemed advisable to remove the patient to a hospital and to operate.

A right rectus incision was made through a very fat abdominal wall. There was no free fluid in the abdomen, and no evidence of fat necrosis except the following: Upon examination of the region of the appendix an almost black appendage of fat presented itself. This was an epiploic appendix, which had apparently twisted upon itself. This was tied off and removed. The appendix itself was perfectly normal in appearance and was, likewise, removed. Exploration showed nothing further abnormal. The abdomen was closed in layers without drainage, and the patient had an uneventful convalescence with the exception of an ether bronchitis and some breaking down of the superficial fat in the abdominal wall.

The pathological report by Dr. Mallory was "Normal appendix. Fat tissue received was hemorrhagic and necrotic."

To me this condition, simulating appendicitis, was new, but I now know of two similar cases operated upon by other surgeons, and Dr. Mallory tells me that he has seen this condition at autopsies several times. Not uncommonly we find tabs of calcified fat, as well as pieces of calcified fat, free in the abdominal cavity which, perhaps, originated as did the condition in the above case.

This patient had every local symptom of an acute appendix and was operated upon with the expectation of finding this condition. This shows that under similar circumstances one would do well to bear in mind this possibility.

I have been unable to find reports of any such condition in medical literature.

Reports of Societies

NEW ENGLAND PEDIATRIC SOCIETY.

RICHARD M. SMITH, SECRETARY.

The meeting of Jan. 29, 1915, was held at the Boston Medical Library, the president, Dr. E. M. BUCKINGHAM, of Boston, in the chair.

The following papers were read:

ACIDOSIS IN CHILDREN.[1]

By ARTHUR A. HOWARD, M.D., Boston.

PARENTERAL IMMUNIZATION IN CONDITIONS OF PROTEID SENSITIZATION.[2]

By J. L. GOODALE, M.D., Boston.

WEANING—ITS RELATION TO ANAPHYLAXIS AS SHOWN BY DIFFERENTIAL BLOOD COUNTS.

By H. C. BERGER, M.D., Boston.

[1] See JOURNAL, page 747. [2] See JOURNAL, page 751.

DISCUSSION.

DR. R. S. EUSTIS: Dr. Howard's paper. Dr. Smith has given me the privilege of examining and reporting on a number of urines which he has obtained during the past month, the total number being about thirty. No less than twenty of these showed a slight trace of acetone. These specimens were taken at random from patients who had no sign of infectious disease, any cold, digestive upset or sore throat. Of especial interest were the evidences of infectious character. There were three children in one family that came down, one after the other, with digestive disturbances, and each one of these showed a moderate amount of acetone in the urine. There was another instance of two children in one family at the same time; still another case where an older child has a history of recurrent vomiting, the patient merely becoming out of sorts and cranky. The mother told Dr. Smith that if it had been the older child she would have started soda bicarbonate several days prior to the visit; as it was she waited, and we took some of the urine and found acetone. Of these twenty acetone cases, certainly not over four could be classed in any way as recurrent vomiting, or were of an exceptionally severe type. There were ten which could be grouped roughly as digestive disturbances. There were several colds and two or three cases of tonsillitis. The whole thing was very interesting, as showing the frequency of acetone in the urine, during this winter, anyway.

DR. J. L. MORSE: It seems to me that this whole question of so-called acidosis in recurrent vomiting is a very vexed one. My own impression is that the tendency in the last one or two years is to exaggerate the importance of the presence of the acetone bodies in the urine. My experience is that the acetone bodies are very commonly present in the urine of children and babies that are sick for any reason and that in the vast majority of instances the presence of these acetone bodies is of no pathological significance. We must remember that we are bound to find the acetone bodies in the urine whenever a child is starved, or even when it is partially starved. We must also remember that if there is a disturbance of the carbohydrate metabolism we are almost certain to get the acetone bodies in the urine. My experience leads me to feel that we can disregard the presence of acetone bodies in the urine unless there are other symptoms which show evidences of acid intoxication. That is, my experience has led me to an entirely different conclusion from what Dr. Howard's has led him. Recurrent vomiting I look on not as a disease but as a symptom-complex which may be due to a variety of conditions. One of the causes of recurrent vomiting I feel very positive is acid intoxication, and the reason that I feel so is that I have seen cases in which the acetone bodies were present in large amounts at the very onset of the disease. The finding of acetone bodies in the urine after a child has been vomiting for twenty-four hours does not show in any way that the acetone bodies are the cause of the attack of vomiting. I feel equally positive that other attacks of recurrent vomiting are due to other disturbance of metabolism. Sedgwick has shown that they are due to the disturbance of the creatinin metabolism, and Snow, of Buffalo, has shown fairly definitely that some are due to an excess of uric acid. I agree thoroughly with Dr. Howard that true recurrent vomiting is a rather unusual condition, and I see a great many cases called recurrent vomiting which seem to me to be cases merely of recurrent indigestion. Why we should have these attacks of recurrent vomiting in certain children as the result of acid intoxication is a very obscure problem. The best explanation which I have seen is, I think, that given by Salge in the *Jahrb. f. Kinderheilkunde,* about a year ago, in which he, in view of his experience, came to the conclusion that they were due primarily to a disturbance of carbohydrate metabolism, but only occurred in children of a definitely nervous make-up, and not in the average child. I think that I was one of the earliest to advocate the use of bicarbonate of soda in the treatment of recurrent vomiting, but as I have seen bicarbonate of soda used in these cases I am not sure but what a good many of them have done as well with the older treatment advocated twenty years ago by Dr. Rotch with bromide and chloral by enema. I do not want to minimize acidosis, but I do feel that its importance is being exaggerated at present.

DR. J. L. MORSE (replying to Dr. Porter): I do not know that I can tell exactly as to the effect of fatigue in these cases, but my experience has been in these cases of recurrent vomiting that if you got at any etiological factor at all it is much more likely to be over-exertion or over-fatigue than it is indiscretion in diet.

DR. H. T. HANDY: I would like to ask the reader how long the recurrent vomiting lasts, if a child is supposed to outgrow it, or if there is any definite age after which it does not have it?

DR. HOWARD, closing: In answer to Dr. Handy's question as to the age when the acidosis attacks may cease to appear. It has been my experience that the condition becomes less frequent after five years and quite rare after 10 years.

In regard to the remarks of Dr. Morse to the effect that the importance of acidosis is being over emphasized and that most cases showing acetone breath and acetone in the urine are not serious; I doubt if there is any real difference of opinion. It has also been my experience that acetone is very frequently present without doing any particular harm. The type of case referred to in this paper, however, has shown definite and serious clinical manifestations and the condition has apparently warranted real concern. I feel that this more serious type of acidosis is of sufficiently frequent occurrence and seriousness to justify prompt consideration and treatment.

DR. E. H. PLACE: This is a most valuable paper and rich in suggestion of the possibility of specific curative treatment of these conditions which have so long been resistant to beneficial management.

The value is great also of being able simply and easily to find out the specific pollens or other proteins causing these reactions. I was struck by the experience of the patient quoted by Dr. Goodale of being so sensitive to horse protein as to suffer attacks from being near hair mattresses. It suggests the old fairy tale about the princess who could feel a pea under seven feather beds might not be so ridiculous.

Seriously, it is marvellous how small an amount of the protein will bring on attacks. It is well known that in guinea pigs what infinitesmal doses will sensitize, but much larger doses are usually necessary to bring on a marked and fatal reaction. It is possible that the application of the intoxicating protein directly to the mucous membranes of the respiratory tract would cause reactions of this

type more readily than if the protein were injected under the skin, on account of local sensitization. Tissues may be sensitized locally under certain conditions without the whole body being so sensitized.

Dr. Goodale spoke of one of his patients being so benefited that she could ride behind her *favorite horse* without an attack. I should like to ask if the suggestion contained therein were true that this patient reacted more to some horses than to others?

We frequently notice of course in giving horse serum antitoxin for diphtheria, that the serum of some horses is worse than others in causing severe reactions.

I should like to ask if in any of this series of cases Dr. Goodale tried the cattle serum to see if any cases ever spontaneously reacted?

DR. GOODALE, in closing. I have not used any other horse serum than that supplied by the Massachusetts State Board of Health. Three lots were sent me at different times, and I can see no difference in the amount of the reaction caused, but it was not possible to make definite comparative tests. Wiedemann suggests the use of ox serum. He employed it in a case of diphtheria, which had previously received an immunizing dose of antitoxin. Fearing anaphylactic shock, he gave the child a drop of ordinary antitoxin from the horse with very nearly fatal result. He then tried giving it by mouth, but after 24 hours there appeared a delayed shock. He then injected ox serum antitoxin and the child was promptly relieved. It is said to be impossible to immunize an ox against diphtheria to the same degree of potency as the horse, but it is suggested that all Boards of Health have ox serum on hand in readiness for such emergencies.

WEANING—ITS RELATION TO ANAPHYLAXIS AS SHOWN BY DIFFERENTIAL BLOOD COUNTS.

An abstract of the paper read by Dr. H. C. BERGER of Boston.

At the suggestion of Dr. Fritz B. Talbot, following the work of Herrick, Johns, Schwenker and Schlert, Weinberg and Sequin and Schloss, on relation of eosinophilia to anaphylaxis, differential blood counts were made on weaning babies at the Massachusetts General Hospital and St. Mary's Infant Asylum.

Breast fed babies were given daily feedings of cow's milk, and babies previously on a modification of cow's milk were given sheep's milk, egg albumen water, or barley water. In practically all cases there was a marked increase in the percentage of eosinophiles present. The highest percentage usually appeared on or about the tenth day, and then rapidly returned to normal.

Babies fed on animal proteids showed a more marked increase in eosinophiles than those fed on a vegetable proteid.

DISCUSSION.

DR. R. C. LARRABEE: The results of Dr. Berger's blood counts must be interpreted with some caution, as the total number of cells enumerated in each case was apparently small. Normally the eosinophiles constitute about one per cent. of the leucocytes. In a differential count of 100 cells this would mean that only one eosinophile would be seen. Obviously a five-fold increase would be within the limits of possible chance variation between different counts from the same smear. At least a thousand leucocytes should be counted in each case. If slight variations are to be considered, the number should be higher—perhaps even 10,000—a long, tedious undertaking. Moreover, what we want to know is the *number* of eosinophiles per cu. mm., not their percentage relationship to other cells. Hence we should have, besides differential counts, an enumeration of the total number of leucocytes per cu. mm.—an ordinary "white count." Otherwise we can not say that a rise in the percentage of eosinophiles is not due to a fall in the other cells. In spite of these criticisms it must be admitted that the uniformity and suggestiveness of the reader's results are evidence of the correctness of his technic.

DR. J. L. MORSE: I would like to ask the reader if he has made any consecutive examinations of the blood in babies that had been taking the same food, whether it was breast milk or an artificial food, as controls?

DR. E. H. PLACE: I understand that in most of these experiments the foreign protein was given once daily from the beginning and throughout; while in a few, single doses were given. Under both these conditions the eosinophilia occurred. It would seem from our knowledge of allergy in anaphylaxis that the reaction was simply a reaction due to the protein and that there was no evidence that sensitization occurred. In guinea pigs if the foreign protein is given daily, it indefinitely postpones the development of sensitization. The time of appearance of the eosinophilia being the same in these cases whether one dose or repeated doses, would suggest that eosinophilia has no relation to sensitization.

DR. BERGER, in closing: In all these cases not over 150 cells were counted, and in none less than 100 cells. I counted 150 cells in a good many normal children outside of this series and I never found an eosinophilia above 4%. I selected children with no skin diseases and in which there was no reason to suspect an eosinophilia. Dr. Schloss, some years ago, investigated a tremendous series of infants and counted a much higher number than 150 cells. He decided that anything above 5% would certainly be abnormal, but I think from some of his work since then that he would probably now put it somewhat lower than that. The way that these counts were made is that each day the infants were brought into the examining room in different order. The number was taken and the date put down on the slide and the slides were all counted, so that is was a mechanical procedure. I had no idea as to whose slide was being counted, or as to the length of time since the foreign proteid was started, and it was only after all the counts were made that the results were classified. After giving a foreign protein there is a definite period when sensitization increases. This is almost always on or about the tenth day. That is when the eosinophilic count is at its highest, that is probably when the climax of the sensitization has been reached, and from that point on the eosinophilia comes down and apparently the child is immunized. That is, he reaches the highest point of sensitization at or about the tenth day, if we can take the results of the work referred to earlier in the paper as a proper interpretation of the eosinophilia in our cases.

Replying to Dr. Morse's question; I have never run a series of controls on any one such infant.

Book Reviews.

Infant Feeding. Its Principles and Practice. By F. L. Wachenheim, M.D., Attending Physician Sydenham Hospital and Mount Sinai Dispensary, New York City. Philadelphia and New York: Lea and Febiger. 1915.

The author states in his preface that "this manual is designed to supply the practitioner with a reference handbook, of moderate size, in which he may find an exposition of the present theory and practice of infant feeding. The material here presented can be secured only by reading a vast journalistic literature which is extremely conflicting in its statements and of little practical use without extensive sifting."

The author's summary of the peculiarities of digestion and metabolism in infancy is fairly complete and up to date. His point of view is, in general, very reasonable. He comes out strongly in favor of breast-feeding and shows the objections to the use of undiluted cows' milk. He is not fair in his criticisms of percentage feeding, which he calls Rotch's method. He apparently fails to realize that the feeding tables which he quotes were prepared years ago, before our knowledge of the digestion and metabolism of infancy was as complete as it now is, and that no intelligent believer in percentage feeding follows any table or believes in any set "method" of feeding. Feeding in percentages is merely a method of calculation and a means of fitting food to the digestive capacity of the individual infant. It is not a system of feeding. After criticising other "methods" of feeding, the author gives a table of his own, which hardly seems consistent. He classes sodium citrate among the alkalies and is apparently unaware of the work of Bosworth and Van Slyke as to its action. He is very strongly in favor of four-hour intervals. He disregards the fact that infectious diarrhea is due to a variety of organisms and that the treatment should be modified according to the etiologic organism in the given case. He gives a very comprehensive review of the literature. He criticizes everyone, Americans and Germans alike, without fear or favor. We do not agree with all his conclusions, but feel that he has intended to be fair but is mistaken. The book affords very interesting reading. We fear, however, that although it is intended for practitioners no one but a pediatrist will really appreciate it.

With Sabre and Scalpel. By John Allan Wyeth, M.D., LL.D. Illustrated. New York and London: Harper and Brothers. 1914.

This picturesque volume of personal and public reminiscence, the autobiography of a soldier and surgeon, is an interesting complement to the recently published personal memoirs of Dr. John H. Brinton. Brinton was a Philadelphian and served throughout the Civil War in the Northern army in important posts as brigade surgeon and field medical director. He subsequently founded the Army Medical Museum at Washington. Dr. Wyeth, on the other hand, a native of Alabama, served throughout the war in the Southern army, though in the ranks and not in a medical capacity. Studying medicine after the war, he has led an active professional life and, as founder of the New York Polyclinic, has made important contributions to the progress of post-graduate medical instruction. The vivid personal narrative of Dr. Wyeth's experiences in the war and throughout his active and varied life, present an admirably contrasted picture to that drawn by Dr. Brinton of his experiences in the opposing army. It is chiefly for their contemporary record of the conditions prevailing on both sides of this great conflict that these two autobiographic volumes are of interest and value, not merely to physicians but to students of history. Not the least delightful part of Dr. Wyeth's volume is some of the verses printed at its close, especially the lines to his mother and the translation of Heine's verses to a flower.

The Cancer Problem. By William Seaman Bainbridge, A.M., Sc.D., M.D. New York: The Macmillan Company. 1914.

This volume is perhaps the most elaborate historical review and critical study which has yet appeared of that greatest of remaining pathologic problems, the riddle of cancer. After a careful sketch of ancient evidences of cancer, the author reviews the history of modern cancer research and the distribution of the disease locally and ethnically. He points out some of the fallacies of statistics of cancer and reviews at length the theories of its etiology and its histopathology. Next he gives a résumé of the world's work on cancer research and recapitulates the clinical course, diagnosis, prophylaxis and treatment of the disease. The final section of the work deals with the modern campaign of education for the prevention, early diagnosis, and prompt treatment of cancer. The volume closes with an elaborate classified bibliography of several hundred titles. It is well illustrated by thirty-nine full page plates and fourteen text cuts. As a summary and critique of the present status and prospects of our knowledge of cancer, Dr. Bainbridge's delightfully well-written volume affords interesting and profitable reading, not only for physicians, but for the educated laity.

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SUBTEMPORAL DECOMPRESSION FOR THE RELIEF OF CEREBRAL SPASTIC PARALYSIS.

IN a recent paper (*American Journal of the Medical Sciences*, for April) Dr. William Sharpe of New York writes of the advantages of the operation of cranial decompression for the relief of intracranial pressure from tumors of the brain, from fractures of the skull, from brain abscess, and from spastic cerebral paralysis. In regard to the last-named he explains that naturally the cases due to a lack of development or malformation of the brain and its pyramidal tracts are not suitable for operation, but claims as rightly operable those having a history of difficult labor, with or without instruments, in which, upon ophthalmoscopic examination, definite evidences of intracranial pressure are found in the dilated retinal veins, edematous blurring and haziness of the nasal halves of the optic disks, and signs of old intracranial pressure. These, he holds, can be improved by merely a relief of the intracranial pressure. The local pressure effects of a hemorrhage, or its resulting cystic formation, are offset by the decompression; a bilateral decompression being performed if the intracranial pressure is high. If the hemorrhagic clot or its subsequent cyst can be removed, so much the better; but in many instances this is not possible. Of course, the longer the clot and its cystic formation are allowed to exert pressure upon the cortex, the more impaired do the cortical nerve-cells become; yet, in his experience of 65 operated cases, only five of them presented the hemorrhagic cyst in or beneath the cortex—that is, the cortical cells were not primarily destroyed, but merely impaired by the pressure upon them, as was the condition in 45 cases observed at the operation. Thus, the longer the intracranial pressure is permitted to continue, the greater will be their impairment; resulting in a persistent and even increasing stiffness and spasticity and, in the majority of instances, a steady mental deterioration. Sharpe's operative mortality in the 65 cases has been six. Four of the fatal cases, however, were of extreme spastic diplegia in children under two years of age who were much emaciated and had great difficulty in breathing and swallowing; a type of case which he says should not be operated upon, as the anesthetization alone is too great a risk. In the past, in these cases of spastic paralysis, attention has been centered upon the correction of deformities and the lessening of spasticity, and the improvement following upon the procedures employed has been only temporary in all but the mild cases. In the instances operated upon by cranial decompression great improvement has as a rule been noted, and although sufficient time has not yet elapsed since the first operation (June, 1913) to permit of a definite judgment, he believes that the improvement will prove permanent.

It is a fact, however, that Sharpe's conclusions have not been generally accepted by the neurologists. This was evidenced at the medical meeting in New York, when he made the first report of his cases and presented a number of the patients he had operated on. At that time the feeling was expressed that in his surgical ardor he had permitted himself to be deceived. Thus, Leszynsky stated that the hopefulness and enthusiasm as to cure in these cases of infantile cerebral palsy were not justified by the facts, and were based upon an erroneous assumption as to

the condition in the brain. The qualification had been made that the operation was done only in those cases in which "pressure upon the brain was shown by opthalmoscopic examination." He felt confident, however, that upon further investigation the patients exhibited would be found not to come up to the required standard, as claimed, when subjected to a critical neurological analysis. It was true that the spastic hemiplegia was the direct result of meningeal or cortical hemorrhage over the Rolandic area, but the presence of a cyst, secondary to the hemorrhage, was merely a terminal condition. The paralysis, due to damage to the pyramidal tract, followed usually by secondary degeneration, was present for some time prior to cyst formation, and it was entirely unwarranted to assume that pressure from such a cyst was an important etiological factor in the paralysis. Hence, there was no rational indication for removing a portion of the skull for the relief of supposed intracranial pressure. He recalled that about twenty years ago the Lannelongue operation was in vogue—a procedure consisting in the making of long longitudinal furrows in both parietal regions, and based on the false idea that a normal brain is prevented from proper growth and expansion on account of premature synostosis. It was abandoned, as it failed to accomplish the desired results, and it was soon conclusively demonstrated that we were dealing with a defective brain. Dr. Sharpe had decried all other forms of treatment, as being directed only to peripheral conditions, and not to the source of the trouble; but he had admitted that the desired improvement required the aid of such measures subsequent to the cranial operation. As to the alleged mental improvement, it seemed to him that this was but temporary and the result of environmental changes, and also largely a matter of self-deception on the part of the mother. A similar state of affairs had occurred at the time of the vogue of the Lannelongue operation, and this was but a repetition of history. He, therefore, felt called upon to protest against this surgical plan of treatment in these cases, as being illogical and unsupported by a sound pathological foundation.

Another speaker raised the point that Dr. Sharpe had unjustifiably made the accoucheur the scapegoat for the mental condition of such patients as he had presented; stating that if forceps delivery were the cause, we certainly should have many more cases of feeble-mindedness, idiocy and spastic paralysis than was now the case. The bones of the skull "shingled" when the head passed through the pelvic outlet, and the child's brain was so pliable that it could stand moulding into a long oval during birth. Flat-head Indians made pressure with a board on their babies' heads, to produce their characteristic form, but subnormal mental conditions were not noticed among them. The trouble was that these children's brains were born defective, and no operation short of implanting a new and perfect brain could make a perfect individual.

It is to be noted that in his paper Dr. Sharpe makes the announcement that a detailed report of his cases is to be published soon, and this will be awaited with interest. Although, as he himself acknowledges, sufficient time has not elapsed to establish the permanency of the improvement, in some instances, it has now been nearly two years since the operation, and if, in these, continuous improvement shall have been observed, it would seem to afford some justification at least for the procedure, whether the view advanced of the pathology in these selected cases of spastic paralysis is correct or incorrect.

PUBLIC HEALTH LEGISLATION IN RHODE ISLAND.

THERE has recently been in Rhode Island a definite legislative attempt to promote the investigation and control of occupation diseases in that state. On April 1, Dr. John G. O'Meara of Providence presented, before the House of Representatives of the Rhode Island General Assembly, the following resolution authorizing the governor to appoint a committee to study occupation diseases and to report to the next session of the Assembly:—

"Whereas, The employment of men and women in certain occupations is known to be attended with more than ordinary danger to health, giving rise to what is known as "occupational diseases," and

"Whereas, Unnecessary sickness and shortening of life, from whatever cause, is a serious loss and of grave concern to the state and to all the people, and

"Whereas, It is believed to be possible by public education, and by enforcement of proper measures, largely to prevent unnecessary sick-

ness and premature death among employees in various trades and occupations, therefore be it

"Resolved, That the governor is hereby authorized and directed to appoint a committee of six citizens familiar with occupational diseases to make a thorough investigation of the effect of occupations upon the health of those engaged therein, with special reference to dust and dangerous chemicals and gases, to insufficient ventilation and lighting, and to such other unhygienic conditions as in the opinion of said committee may be specially injurious to health, and to report to the next general assembly the results of such investigation, with such recommendations for legislative or other remedial measures as it may deem proper and advisable, and the sum of $500, or so much thereof as may be necessary be and the same is hereby appropriated to pay the expenses of the investigation by said committee; and the state auditor is hereby directed to draw his order or orders upon the general treasurer for the payment of the same, out of any money in the treasury not otherwise appropriated, upon the receipt of vouchers approved by the governor."

This resolution, unfortunately, was not reported from the finance committee to which it was referred, but it is expected that the subject will be renewed next year. Meantime the Assembly has passed this year a bill (House No. 348) to require the reporting of certain occupation diseases. The diseases included in this act are specified as follows in the text of the bill:—

"Section 1. Every physician in this state attending on or called in to visit a patient whom he believes to be suffering from poisoning from lead, phosphorus, arsenic, brass, wood-alcohol, mercury or their compounds, or from anthrax, or from compressed-air illness, or any other ailment or disease, contracted as a result of the nature of the patient's employment, shall within forty-eight hours of such attendance send to the state board of health a report stating:

"(a) Name, address and occupation of patient.

"(b) Name, address and business of employer.

"(c) Nature of disease.

"(d) Such other information as may be reasonably required by the state board of health.

"The reports herein required shall be on or in conformity with the standard schedule blanks hereinafter provided for. The posting of the report, within the time required, in a stamped envelope addressed to the office of the state board of health, shall be a compliance with this section.

"Sect. 2. The state board of health shall prepare and furnish, free of cost to the physicians included in Section 1, standard schedule blanks for the reports required under this act. The form and contents of such blanks shall be determined by the state board of health.

"Sect. 3. Reports made under this act shall not be evidence of the facts therein stated in any action arising out of the disease therein reported.

"Sect. 4. It shall furthermore be the duty of the state board of health to transmit a copy of all such reports of occupational disease to the chief factory inspector."

This act will take effect on July 1, 1915. The assembly has also passed a bill (House No. 136) amending the previous act of 1912 relative to the sale of wood alcohol, providing for the conspicuous labeling of all vessels containing wood alcohol and establishing a fine or imprisonment for the sale, or possession with intent to sell, of articles containing wood alcohol not so labeled.

Another act (House No. 166) passed by the assembly prohibits the manufacture or sale of adulterated, misbranded or injurious foods or drugs. By another (House No. 201) "in order to prevent the spread of communicable diseases the state board of health is authorized to prohibit, in such public places, vehicles, or buildings as it may designate, the providing of a common drinking cup and of a common towel."

These measures, which are analogous to similar legislative acts already established in some other states, are indicative of a commendable and alert concern in public health problems in Rhode Island, and their successful passage and enforcement should lead to further progress in similar directions.

ACIDOSIS IN CHILDREN.

THE publication, in another column of this issue of the JOURNAL, of an article by Dr. Arthur A. Howard of Boston on "Acidosis in Children" recalls the epidemic of this condition which prevailed in and about Concord, N. H., in Dec., 1913, and in Jan., 1914, and which was officially reported by Dr. Carleton R. Metcalf of that city in a paper on "Acidosis with Autointoxication in Infants and Children," presented before the annual joint meeting of the New England Pediatric Society, the Philadelphia Pediatric Society, and the Pediatric Section of the New York Academy of Medicine, in New York City, on November 5, 1914, and published in the January number of the *American Journal of Diseases of Children.*

Dr. Metcalf's report was based on a study of one hundred consecutive cases occurring in apparently epidemic form. Among these there were nine fatalities. The earliest cases appeared at Penacook, five miles from Concord; other sporadic cases occurred at Boscawen and Canterbury, ten miles from Concord in either direction; but the majority were in the city itself. Indiscretions in diet preceded the onset of many of the cases, but no definite defective food supply could be determined as the cause. Many of the cases were associated with respiratory infection, and Dr. Metcalf is inclined to believe the origin infectious, though without bacteriologic proof.

Perhaps one of the most interesting subjects in connection with this epidemic is that of the history of the disease. According to Dr Howard, Nauyn is credited in the literature as being the first to describe clearly the condition of acidosis as the result of the pathologic production of acids in the course of metabolism. Gee of London is said to have contributed the first English paper on the subject in 1882. At the time of the Concord epidemic Dr. John Lovett Morse of Boston published the following brief sketch of the bibliography of the disease, referring particularly to the elaborate work of Brackett, Stone and Low published in the JOURNAL in 1904.

"Litten (*Zeitschr. f. klin. Med.*, 1883-4, vol. 7, p. 81) described this condition in children in 1883. Baginsky (*Arch. f. Kinderheilkunde*, 1888, vol. 8, p. 1) made a very careful study of acetonuria in children in 1888. Czerny and Keller called especial attention to acid intoxication in the acute gastrointestinal diseases of infancy in 1897 (*Jahrb. f. Kinderheilkunde*, 1897 vol. 45, p. 274). Marfan, 1901, describes a series of cases under the head of Vomiting in Acetinemia, which are apparently identical with the cases now under discussion (*Archives de Medecine des Enfants*, 1901, vol. 4, p. 641). Peirson of Salem, Mass. (*Archives of Pediatrics*, 1903, vol. 20, p. 505), described a series of these cases in 1903, as did Edsall, formerly of Philadelphia but now of Boston, in 1902 and 1903 (*Philadelphia Medical Journal*, 1902, vol. 9, p. 1155, and *Americal Journal of Medical Sciences*, 1903, vol. 125, p. 629). Brackett, Stone and Low reported a series of cases from the Boston Children's Hospital, with an extensive review of the literature, in 1904 (BOSTON MEDICAL AND SURGICAL JOURNAL, 1904, vol. 151, p. 2)."

Especial reference should also be made to the paper by Dr. Morse on "Acid Intoxication in Infancy and Childhood," published in the *Archives of Pediatrics* in 1905 (vol. 22, p. 561). Dr. Howard in his article, reports a further series of 64 cases of acidosis in children, not, however, appearing in epidemic form, and among these there were three fatalities, a mortality but little more than half that of the Concord epidemic. Dr. Howard also discusses particularly the treatment of the disease and his conclusions in this respect may profitably be compared with those of Dr. Metcalf, and with those of Parke in his report of the recent Birmingham epidemic (*Jour. A. M. A.*, 1907, vol. xlix, p. 1827; and 1910, vol. lv, p. 991), in which the mortality was 71%.

Perhaps the most important point for emphasis in conjunction with a comparative study of the various contributions is that the condition of acidosis is one likely to be present with considerable constancy among children under various circumstances of illness, and liable to occur with greater virulence in epidemic form as a result of some accessory cause not yet fully understood.

THE EARLY DIAGNOSIS OF TUBERCULOSIS.

THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS has recently formulated plans for a movement among physicians and medical societies to secure more interest and coöperation in the anti-tuberculosis campaign in this country. The executive committee of this Association has two specific suggestions to offer in this connection. The first is that each state medical society, by a special resolution or otherwise, urge upon all of its members the importance of special training in the early diagnosis of tuberculosis. The second suggestion is that each state medical society recommend to each of its county or local societies that at least one of their meetings every year be devoted to the discussion of tuberculosis. The National Association offers its services in the furtherance of either of these suggestions.

The movement on the part of the National Tuberculosis Association is a well-timed one. A well known Boston physician recently made the statement that if one wished to clear the hall at a medical meeting, one only had to announce that the subject of tuberculosis would next be considered. At one of the most important meetings of the year, held by the Suffolk District

Medical Society, at which the State Commissioner of Health read a paper of vital importance to every doctor in this community, there was but a sparse attendance. There is a growing feeling among a large number of the members of the National Tuberculosis Association that because tuberculosis is largely a social and economic problem, social workers and not physicians should be in control of the campaign. This is an unfortunate state of affairs. While there are bound to be waves of enthusiasm among the laity and the public at large in regard to any popular campaign such as that waged against tuberculosis, which are generally followed by periods of depression and lack of public interest, this ought not to be the case in the medical profession.

Tuberculosis has been in the past, and still is, one of the greatest if not the greatest of the problems which confront us. Any disease which annually kills over 200,000 people in the United States, needs continued and aggressive action on the part of the doctors of this country. In Boston, at least, there has been no meeting of the Suffolk District Medical Society this year or last which has particularly taken up the subject of tuberculosis.

It is hoped that the efforts of the National Association to arouse further interest in tuberculosis and in the prevention of this disease, as well as in preventive medicine in general, will meet with a hearty response from the medical profession.

EXPERT ADVICE DISREGARDED.

AN example of unwise, hasty and ill-advised public health legislation occurred in the passage, by the Massachusetts House of Representatives on May 6, of Mayor Curley's so-called pure bread bill, which provides for the labeling of all loaves of bread containing any ingredients other than those commonly sold for food products. The bill is injudicious because its provisions include ingredients which have been used for several years and which are not harmful to health. The labeling provision is particularly undesirable because of the unsanitary possibilities connected therewith. In realization of these defects, Dr. Allan J. McLaughlin, state commissioner of health, prepared a substitute measure, which was offered, eliminating from the Curley bill the labeling provision and allowing bakers to use any ingredient tending to advance the art of baking, provided it be not dangerous to the public health. This rational substitute, which would have provided for the public all needed protection, was, however, defeated for political motives and the Curley bill passed. This bill was signed by the Governor on May 15, and will become operative on June 15. In the light of this legislative action it may well be queried what is the value of expert advice if it is to be overriden by other authority without special knowledge or experience.

HEALTH CONDITIONS IN BELGIUM.

WHATEVER may be said of the international ethics involved in the invasion of Belgium, it appears that in matters hygienic the Germans are doing their full duty by the country. Dr. Mamlock, a German medical writer, describes the present health administration there in a recent number of the *Deutsche medizinische Wochenschrift*, and the *British Medical Journal* for April 3rd admits that the sanitary conditions of the country are "not totally disorganized."

The health department, ostensibly under the control of the Belgian authorities, is really run by the Germans, and the physicians of both nations are coöperating in prophylactic measures, holding joint meetings from time to time to further this work. Their chief care at present is to prevent the spread of venereal diseases, which seem to be unusually prevalent.

Namur is the headquarters for military medicine in Belgium. The Belgian Sisters of Charity and the local health department are in charge of infectious diseases. The control of the hospitals in the town has been assumed by the Germans and many convents have been converted into hospitals, x-ray apparatus, dental departments, medicinal baths and other appliances having been installed.

MEDICAL NOTES.

FINE WEATHER BRINGS LOW DEATH RATE IN NEW YORK.—There were 1609 deaths and a death rate of 14.46 reported during the last week as against 1607 deaths and a rate of 15.01 for the corresponding week of 1914, an increase of two deaths and a decrease in the rate of .55 of a

point, which is equivalent to a relative decrease of 61 deaths.

The causes showing an increased mortality were measles, scarlet fever, diarrheal diseases and lobar pneumonia.

Those showing a decreased mortality were diphtheria, whooping cough, typhoid fever, organic heart and kidney diseases, broncho-pneumonia and pulmonary tuberculosis.

Viewed from the point of age grouping, the mortality of children under five years of age was considerably above, while that of adults and old people was slightly below that of the corresponding week in 1914.

The death rate for the first nineteen weeks of 1915 was 14.71 per one thousand of the population as against a rate of 15.41 for the corresponding period of 1914, a decrease of .71 of a point.

PHYSICIANS ABOARD THE LUSITANIA.— So far as ascertained, it is known that there were five American physicians aboard the *Lusitania* when she was sunk off the Irish coast on May 7. They were Dr. Howard L. Fisher of Washington, D.C., and Dr. F. Warren Pearl of New York, a surgeon-major in the United States army during the Spanish-American War, both on their way to join the American Red Cross unit in Belgium, Dr. James T. Houghton of Troy, N.Y., Dr. O. N. Kenan of Wilmington, N.C., and Dr. D. V. Moore of Yankton, S. D., who had volunteered his services to the British War Office and was on his way to report for duty. The fact that all these physicians were saved is presumably attributable to their superior coolness and self-possession in emergency. One of the most regrettable losses was that of Madam Depage, who has recently been in America raising money for the Belgian Red Cross.

ESCAPE OF A LEPER FROM JAIL.—Report from Springfield, Ill., states that an Italian leper who for the past three months has been imprisoned in the local jail, escaped on May 6 and is still at large.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS.—The second annual meeting of the American Association of Immunologists was held in Washington, D.C., on Monday, May 10, under the presidency of Dr. Gerald B. Webb of Colorado Springs. A large program of addresses was presented and Dr. Emil Abderhalden of Halle, Germany, was elected to honorary membership. A complete report of the meeting will appear in a later issue of the JOURNAL.

GERMAN ASSOCIATION OF SCIENTIFIC MEN AND PHYSICIANS.—Report from Berlin states that Dr. Friedrick von Müller, professor of internal medicine at Munich, has been elected president of the German Association of Scientific Men and Physicians to succeed the late Dr. Eberhard Fraas.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.—At the annual meeting of the Pathological Society of Philadelphia on April 22, Dr. David L. Edsall of Boston delivered the annual address on "Bearings of Industry on Medicine."

PREVALENCE OF MENINGITIS, PELLAGRA AND POLIOMYELITIS.—The weekly report of the United States Public Health Service for April 30, 1915, states that during the preceding month of March there were reported 37 cases of cerebro-spinal meningitis in Virginia, 13 each in Massachusetts and Ohio and seven each in California and Indiana. During the same month 51 cases of pellagra were reported in Virginia and 38 in South Carolina. There were 20 cases of poliomyelitis in Virginia and eight in Massachusetts.

AWARD OF THE RICKETTS PRIZE.—Report from Chicago on May 5 states that the Howard Taylor Ricketts prize has been awarded by the faculty of the University of Chicago Medical School to Dr. Maud Slye, a medical research worker for her experiments in mouse cancer.

AWARD OF OSIRIS PRIZE.—Report from Paris on May 5 states that the French Institute has recently divided the accumulated funds of the Osiris prize, of which no award was made in 1912, to Drs. Chantemesse, Widal and Vincent, for their work on bacterial vaccines. A further sum is given to various ambulances and the remainder held in reserve. This prize was established in 1899 by Daniel Osiris, who established a fund whose income should be used triennially to award a prize of about $20,000 for the most remarkable work or discovery of general interest.

AMERICAN GYNECOLOGICAL SOCIETY.—The fortieth annual meeting of the American Gynecological Society is being held at the Greenbriar White Sulphur Springs, West Virginia, on May 18, 19 and 20 of the current week. The presidential address was made by Dr. Thomas J. Watkins of Chicago at the morning session on May 19. On May 20 a joint session is to be held with the American Association of Genito-Urinary Surgeons at which, among others, addresses are to be made by Dr. Hugh Cabot and Dr. A. L. Chute of Boston on errors in the diagnosis of renal and urethral calculi and of renal infections.

UNIVERSITY OF NEBRASKA MEDICAL SCHOOL.—It is announced that the thirty-fourth session of the Nebraska State Legislature, which recently adjourned, has appropriated the sum of $150,000 for the erection of a teaching hospital in conjunction with the University of Nebraska Medical School at Omaha.

NATIONAL COMMISSION ON MILK STANDARDS.—The annual meeting of the National Commission

on Milk Standards was held in New York on May 6. This commission, composed of prominent public health officials and sanitarians, was appointed in 1911 by the New York milk committee to recommend standards of milk and milk products. Among its members are Dr. Carl L. Alsberg, chief of the bureau of chemistry of the United States Department of Agriculture; Dr. John F. Anderson, director of the hygienic laboratory of the United States Public Health Service; and Dr. A. D. Melvin, chief of the bureau of animal industry of the United States Department of Agriculture. At its recent meeting the commission adopted a series of recommendations for new sanitary standards and regulations to govern the manufacture and sale of ice cream, butter and condensed milk. In an announcement made by the commission is the statement that "it is now known that all of the dangerous diseases spread through infected milk are also spread through ice cream and butter. In fact, these products offer a good medium through which germs of typhoid fever, tuberculosis, diphtheria, scarlet fever, septic sore throat and other infectious diseases may be transferred from diseased animals and handlers to consumers."

In this connection it is interesting to note the superiority of the milk supply in the District of Columbia, and its freedom from epidemics due to milk. It is controlled by a commission appointed by the President, consisting of three members whose jurisdiction extends over the police and health departments. The results obtained have been the more noteworthy in view of the fact that 85 to 90% of the milk supply comes from outside the district, and, while 85% of this comes from Maryland and Virginia, the remainder comes from Ohio and southern New York. None of this, however, is over 48 hours old. Washington inspectors have the benefit, of course, of the federal pure food law as well as their local regulations, and put them in force by inspection of every dairy that sends milk to Washington for sale.

EUROPEAN WAR NOTES.—Report from Washington, D. C., on May 6 announces an anonymous gift of $10,000 for use by the American Red Cross "on the field of action in the European war, wherever the society may find the need most urgent and without regard to the nationality of those whom it may benefit."

On May 6 a party of eighteen nurses sailed from New York on the steamer *Philadelphia* for Boulogne, France, where they will work in field hospitals under the French Red Cross.

On May 8 Dr. Sherman Dunn sailed from New York aboard the French liner *Espagne* for Bordeau, France, to serve with an American Red Cross unit at Amiens and at a base hospital near Ypres.

On May 15 a party of four physicians, one sanitary engineer and ten sanitary inspectors sailed from New York aboard the *Athenia* for service in the suppression of the typhus epidemic in Serbia. The physicians of the party are Dr. Henry D. Neagle, Dr. A. F. Cornelius, Dr. S. H. Osborne and Dr. Harold H. Mitchell.

On May 8 Miss Mabel T. Boardman, national chairman of the American Red Cross, issued at Washington the following statement based on despatches from Dr. Richard P. Strong, head of of the American Sanitary Commission engaged in the suppression of typhus fever in Serbia:—

"The American Red Cross has received several despatches from the Sanitary Commission, which it sent to Serbia in coöperation with the Rockefeller Foundation. In the first despatch Dr. Strong reports that he believes the epidemic controllable in a comparatively short time under proper measures. There existed no central organization when he arrived there. The British, French and other organizations were each acting independently. He at once arranged to organize a central health board, and to introduce, with the government's support, proper measures of control. The work includes Montenegro, where also typhus is epidemic.

"On April 26, Dr. Strong reported that a board of health had been organized, with Prince Alexander as its president, Sir Ralph Paget as its vice-president, and Dr. Strong medical director. The chiefs of the French, Russian and English commissions and members of the military and civil medical departments of Serbia constitute the board. In this cable Dr. Strong asked for 500 clinical thermometers for the Serbian Red Cross, as there were only sixty in the country and none could be obtained in Europe. These the American Red Cross is arranging to send. He asked also for the twenty-five doctors or medical inspectors of sanitary work and a sanitary engineer, also the supplies that are being sent.

"In a cable of April 27 Dr. Strong made an additional request for 150 doctors, inspectors, or fourth-year medical students for the Serbian Government. He asked for cholera vaccine, for a bill was about to pass making cholera vaccination compulsory. The Red Cross is sending on the 13th, 12,200 doses of this vaccine. It sent a small shipment with the personnel that sailed some time ago. In the last despatch Dr. Strong said that the work was progressing favorably and harmoniously."

On May 15 the totals of the principal American relief funds for the European War reached the following amounts:—

New England Belgian Fund.....	$256,253.65
Massachusetts Red Cross Fund...	134,200.95
New England Jewish Fund.....	61,974.86
Boston Polish Fund.....	45,596.54
Boston Serbian Fund.....	29,366.25

It is stated by the New York commission for relief in Belgium that the total of the cash and cargoes (in value) contributed in America, for distribution by the commission, now amounts to $60,644,355.00. The total weight of foodstuffs and clothing amounts to 674,876 tons.

BOSTON AND NEW ENGLAND.

Subscription Dinner to Dr. Smith.—It is announced that the postponed subscription dinner to Dr. Theobald Smith will be held at the Harvard Club on Wednesday, June 2, at 7 p.m. All physicians who desire further information about this dinner should communicate with Dr. Marshal Fabyan, 379 Commonwealth Avenue, Boston.

Transfer of Boston Quarantine Service.—On May 10 a lease was signed by Mayor Curley and by Dr. L. E. Cofer, the latter representing Surgeon-General Blue of the Public Health Service, providing for the transfer of the Boston Quarantine Service to the federal health authorities on June 1. The terms of the lease are based on a nominal rental of $1.00 for the first year, at the expiration of which time it is expected that Congress will pass an appropriation for the purchase of the quarantine property at a price to be fixed by arbitration, presumably about $200,000.

Children's Hospital Training School.—The annual graduating exercises of the Children's Hospital Training School of Boston were held at the Harvard Medical School on Thursday afternoon of last week, May 13. Diplomas were awarded to a large class of pupil candidates.

Physical Condition of Harvard Freshmen.—Dr. Roger I. Lee, professor of hygiene at Harvard College, has recently submitted a report presenting the result of a physical examination of the 662 members of the freshman class. Of these 288, or 43½%, had had some previous operation for trouble with the nose or throat. There were 273, or 41%, who wore glasses, and of these 108 wore them constantly. Forty-one, or 6%, had been operated upon for appendicitis; 20 presented lesions of the lungs, of which 12 were tuberculous; and 19 had some form of valvular disease of the heart. Thirty-three had never been vaccinated against smallpox. Only one had serious dental caries. The average age of the students examined was 18, the average weight 136 pounds and the average height 5.8 ft. At the conclusion of his report Dr. Lee writes in part as follows of the results and value of this examination:—

"One usually receives general impressions from a survey of this sort that cannot be put down in statistical form. The marked general impression which I gained from the completed examination of these 662 freshmen was that they made up a very healthy, wholesome group of young men.

"It had been the expectation that probably the real value of this examination would be the detection of a certain amount of disease which, if detected early, could be cured. We were able to discover in a number of students conditions that have subsequently been corrected. We have also detected certain impairments which require observance and guidance, probably throughout the college course. This is already being done.

"But the greatest value of this examination, to my mind, and with this I have been very strongly impressed, is not so much the detection of existing disease, as the assurance of a larger group of boys, who think that they have disease, that they are really sound. Curiously enough, there were more boys who thought they had a serious organic defect, usually of the heart, and were found entirely sound, than boys who thought they were well and had disease. In many instances boys were worrying over ailments that were purely fanciful, but this worry was having a considerable effect on their general condition. The importance of the compulsory physical examination seems to be as much the correction of erroneous ideas concerning disease in the healthy as the detection of disease."

Nursing Associations in America.—In an address before the recent Massachusetts Health Conference, Miss Ella Phillips Crandall of New York presented statistics of the nursing associations and their work in America. In 1901 there were only 53 such organizations and only 136 nurses in the United States doing what may be termed community nursing. The municipal nurse was hardly known. There are now 2,066 nursing organizations in the United States and over 5000 nurses serving under departments of health or education, philanthropic organizations, insurance companies, and industrial and commercial agencies. The work of these nurses is primarily educational and prophylactic. The Boston Instructive District Nursing Association is recognized throughout the country as the pioneer organization in work of this sort.

Report of the Norfolk State Hospital.—The recently published first annual report of the Norfolk State Hospital for the treatment of inebriate patients and drug habitués contains the following information: There were 550 new cases received since June 1, 1914, the date of the opening of the hospital, 450 of whom were voluntary and 100 committed by the courts. In January, 1914, a permanent out-patient office was established in Boston, and because of its great value to the out-patient department of the hospital its extension is strongly recommended. The out-patient department of the hospital submits the following figures: visits to office, 471; visits to hospital, 105; visits to homes of patients who have been discharged from the hospital, 2770; visits to employers relative to work for discharged patients, 130; situations obtained for discharged patients, 97; men who are abstinent and working, 1188; men who are abstinent, but not working, 227; men who

are drinking some, but working, 295; men who are drinking and not working, 472.

MONSON STATE HOSPITAL.—The trustees of the Monson State Hospital report for the year ending Nov. 30, 1914, an average number of patients of 943, of which 96 were discharged and 62 died. Eight hundred and twelve patients were employed in various ways about the hospital and the report contains a long list of articles made by patients in the sewing and industrial rooms. Appropriations for the enlargement of the administration building, for increasing the supply of surface water and for the purchase of an electric outfit are requested.

FOOT AND MOUTH DISEASE QUARANTINE IN NEW ENGLAND.—Report from Washington, D.C., on May 7, states that the National Department of Agriculture ordered the foot and mouth disease quarantine entirely raised in New Hampshire on May 10 and the restrictions in the quarantine area in Rhode Island modified on the same date.

HOSPITAL BEQUESTS.—The will of the late Frances Bartlett, of Boston, which was filed in the Suffolk Probate Court on May 7, contains a bequest of $24,000 to the Boston Instructive District Nursing Association, the income to be used to support a nurse under direction of the Boston Lying-in Hospital, the fund to be available so long as the association and hospital coöperate, and when they cease to coöperate the income to be used to support one or more nurses for the association. The will provides that when the association ceases to carry out the purposes of the bequest, then $14,000 of the fund shall go to Harvard and the balance to the Lying-in Hospital.

The will also contains a bequest of $20,000 to Harvard College to support two scholarships, one for the college, the other for the Harvard Medical School. The will also contains a remainder providing that Harvard shall receive the income of the residuary estate, to be applied equally for the maintenance of scholarships in the college and in the medical school.

Gifts have been announced to the sum of $72,908 to be devoted to cancer research at the Harvard medical school. Of this amount, $50,000 is provided by a bequest in the will of the late Philip C. Lockwood of Boston.

CASES OF INFECTIOUS DISEASES reported to the Boston Board of Health for the week ending May 11, 1915: Diphtheria, 64, of which 9 were non-residents; scarlatina, 70, of which 6 were non-residents; typhoid fever, 7, of which 1 was non-resident; measles, 160, of which 10 were non-residents; tuberculosis, 56, of which 2 were non-residents. The death-rate of the reported deaths for the week was 17.97.

Massachusetts Medical Society.

THE LABOR CLEAN MILK BILL.

THE President of the Massachusetts Medical Society has recently sent to every member of the Society the following circular letter, relative to the Labor Clean Milk Bill (Senate No. 482), which has been editorially advocated by the JOURNAL, and the text of which appeared in our issue of Feb. 25, 1915:—

"My dear Doctor:—

The Labor Clean Milk Bill advocated by the Massachusetts Medical Society will soon be laid before the Governor for his signature.

Will you please write to His Excellency, David I. Walsh, Governor, expressing the hope that he will sign this most important health measure.

It will enable the State Department of Health to enforce its suggestions for cleanliness in connection with the milk supply, something it cannot do under existing law. It also abundantly safeguards the rights of the producers and handlers.

It will be valuable to local boards which have not adopted dairy regulations, as they can invoke its aid to require unhealthful conditions to be cleaned up.

It is desirable that you should write the Governor as soon after the receipt of this letter as possible.

Very truly yours,
CHARLES F. WITHINGTON, M.D.,
President."

Miscellany.

TRIENNIAL MEETING OF THE HARVARD MEDICAL ALUMNI ASSOCIATION.

THE triennial meeting of the Harvard Medical Alumni Association which is being held in Boston today affords an opportunity for both remote and recent graduates to observe the advances which have been made in the various departments of the school, in its affiliated hospitals, and in the other hospitals of the city. In the morning there will be operations and demonstrations of cases by members of the various staffs at the Massachusetts General, Boston City, and Psychopathic Hospitals, and at the Free Hospital for Women. At the Massachusetts General Hospital from 11.25 a.m. to 12.30 p.m., the following special reports of investigations will be given:—

(1) A New Preparation for Making Injected Radiographs, by Dr. E. L. Young, Jr.
(2) The Value of Cardiography in Diagnosis, by Dr. P. D. White.

(3) The Clinical Value of Urobilin Estimation in the Stools as an Indication of Blood Destruction, by Dr. O. H. Robertson.
(4) The Clinical Study of the Blood Flow, by Dr. J. H. Means.
(5) Splenectomy in Pernicious Anemia, by Dr. R. I. Lee.
(6) Types of Pneumococci in the Mouth in Normal Individuals in relation to the Etiology of Lobar Pneumonia, by Dr. F. T. Lord.
(7) The Heart Muscle in Pneumonia, by Dr. L. H. Newburgh.

At the Boston City Hospital the following special demonstrations will be given:—

10.00 a.m.—Surgical Amphitheatre. Demonstration of X-ray Findings in Pericarditis, Drs. Sears and Palfrey.
10.15 a.m.—Use of the Duodenal Tube in Diagnosis and Treatment, Dr. F. W. White.
10.30 a.m.—Cases of Obscure Mediastinal Lesions, Dr. Cleaveland Floyd.
10.45 a.m.—Demonstration of Cases of Fat Transplantation, Drs. Lund and Loder.
11.00 a.m.—Technic of Blood Transfusion with Glass Cylinders, Dr. A. R. Kimpton and J. H. Brown, Ph.D. (Illustrated by moving pictures.)
11.15 a.m.—Observation on Blood Pressure, Dr. Cadis Phipps.
10-12—Pathological Laboratory. Demonstrations of Cutaneous Infection caused by a new fungus (Phialophora verrucosa). Dr. E. M. Medlar.
Demonstration of Cross specimens preserved by the oil (modified Kaiserling) method.

In the afternoon there will be similar demonstrations at the Peter Bent Brigham, Children's and Huntington Hospitals. At the Harvard Medical School the various departments will be open for inspection from 2.30 to 5.30, and the following special demonstrations will be given:—

2.30.—Department of Physiology.
(1) Electrical Changes in Contracting Muscle, by Dr. Alexander Forbes.
(2) Quantitative Electrical Stimulation applied to Human Beings, by Dr. E. G. Martin.
(3) Experimental Exophthalmos, by Prof. W. B. Cannon.

3-3.30—Department of Hygiene and Preventive Medicine.
Ten-minute talks by each man in the department upon the problems at which he is now working.

4-4.30—Amphitheatre, Building D.
Syphilitic Diseases of Bones, with lantern slide demonstration, by Dr. E. H. Nichols.

4.30-5—Bone Changes in Rhachitis and Allied Conditions, with lantern slide demonstration, by Prof. R. W. Lovett.

The triennial dinner will be held at the Harvard Club at 7.30 p.m. The principal speakers will be Dr. H. P. Walcott, Dr. Leonard Wood, Dr. E. H. Bradford, Dr. H. D. Arnold, Dr. Haven Emerson and Dr. F. W. Peabody. All alumni, whether members of the association or not, are cordially invited to attend, and tickets at $3.00 each, may be obtained at the dinner by those who have not already procured them. This triennial gathering of Harvard Medical graduates is an occasion, not only of pleasure and profit to them, but of advantage to the school to which they owe their medical training. It is earnestly to be hoped that every medical alumnus who can possibly make arrangements to attend any or all of the functions of this day will do so, not for his own sake alone but for that of others and of the school.

Correspondence.

PARIS LETTER.

Military Deaths and Funerals in Paris.

(From Our Special Correspondent.)

Paris, April 24, 1915.

Mr. Editor: It is a curious thing to observe the unsuspected strength of the callous side of human nature. In times like this, when all around us we hear of little else than misfortune or woe, we so quickly grow used to them that nothing short of an actual calamity any longer makes an impression. A large percentage of the women here are in mourning; everyone you speak to has lost relatives, one or several; out of six men mobilized in the house in which I live, three have been wounded, two very severely; my maid has had one cousin killed, and another is down with typhoid fever; and on the streets the sight of blind, maimed and disabled soldiers, all of course young and in the very prime of life, is incessant. After six months of this sort of thing it is really perhaps not surprising that we should have become unfeeling pachyderms.

There is, however, one sight that never fails to make a deep impression on me,—the simple, military funeral-convoy of the soldiers who die in the ambulances here: it is, I imagine, this very simplicity that goes so far toward the extraordinary effect produced. Many of these gallant men have given up their lives for their country in utter silence, and die surrounded by entire strangers, their relatives in remote provincial villages often never even hearing what their fate has been. The importance which the French attach to the three great functions of life, births, marriages and deaths, is, of course, well-known; they were not the people, therefore, to allow these unfortunate victims of war to be whisked away surreptitiously and buried in some obscure cemetery without any of their beloved formalities. It was in consequence arranged by warm-hearted residents with the authorities that a regular funeral was to be accorded to each soldier dying in the Paris ambulances, even though he had not a friend, or a cent to his name. This thoughtfulness goes to show how difficult the French character is to understand, on account of its unexpected many-sidedness; for, in general terms, the Frenchman is not a kind person, at any rate as we comprehend the term. On the contrary, from our viewpoint he is

rather cold and hard. Yet this burial trait is simply charming. Here is what you see on the streets pretty much every day: A simple but nice open hearse, bearing the coffin shrouded in the beautiful national colors, and with a few flowers; the little procession is preceded by the usual municipal representative in dress suit, cocked hat and scarf of office; on either side walks the picket of honor with rifles reversed; and the rear is brought up by the indispensable cortège of mourners, who in this case, however, have to be purely people of good-will, soldiers, police, nurses in uniform, sisters of charity, and finally a few curious-looking elderly men and women, none of whom seem to know each other, and who have a general air of wondering how they came to be there. I have been told that there is a sort of confraternity of men and women with big and tender hearts that make it their regular business to follow to the grave the remains of these noble sons of France. They have probably reasoned within themselves that it will be a certain source of consolation to many a mother's heart throughout the land to feel that if her son is one of the many who breathe their last in the Paris military wards, he will at least be buried with ceremonious respect.

These funerals proceed at a measured pace. The invariable custom here is, even in times of peace, for the men on the sidewalks to touch or raise their hats as a cortège passes, and for the women to cross themselves. But now it is quite a different affair. As the picket of ten surrounding the tricolor goes slowly along, the passers-by on either side step to the edge of the curb, stand at attention and bare their heads. Many of them are former soldiers, and display in their buttonholes the green and black ribbon of the campaign of 1870. And as they line up there, giving the last salute to their younger comrade of this war of liberation, you suddenly observe a fact that the custom of wearing hats in the street had hitherto kept from evidence: that most of the men in Paris now are either gray, white or bald! All of the younger set are under arms. In a word, it is one of the most impressive scenes I have witnessed for a long while, and I am not ashamed to own that my eyes are moist each time it is given to me to be a spectator at one of these "last posts."

It is reported that at one of the recent ordinary civilian funerals an incorrigible Paris *garroche* was heard to murmur to himself: "'Well there's a chap who could not have been very inquisitive!"—The hidden meaning of the remark being, of course, that it would worry him, *garroche*, more than a little to have to die just at this juncture, and not to live to see the end of this campaign and to learn what the peace terms will be. Think of departing to Abraham's bosom, for instance, with a wretched attack of pneumonia, as was the case with poor Lord Roberts, and never knowing how the war ended, what compensation was granted to Belgium and what her future frontier is to be; without reading of the re-uniting after more than a century of the three fragments of the Kingdom of Poland; without a knowledge of whether the former wrong to Denmark was made good, or the two provinces wrested from her by the joint attack of Austria and Germany in 1864 returned to her; and, last but by no means least, without being here to see the little men in red trousers make their delirious reëntry up the Avenue du Bois and down the Champs Elysées.

Among all the deaths that have occurred of late, two strike me as beyond all measure sad. The first is that of Paul Deroulède, the enthusiastic, indefatigable patriot and apostle of the Revanche. What a cruel irony of Fate that this generous son of the generous race should have been able to keep up his belief in the future return to France of the two lost provinces through all those dark and hopeless years, during which there seemed to the general outsider to be about as much prospect of the realization of this idea as of the annexation of the planet Mars,—only to die six months before the outbreak of the hostilities that would have brought to him the dearest wish of his heart! And here again can be cited a noble and kindly deed to the credit of the French arms. When the first French *chasseurs* crossed the boundary of Alsace they at once threw down the German frontier-post, with its eagle and "Deutsches Reich," despatched it off to Paris, and had it fastened to the wall as a trophy over Paul Deroulède's grave in the modest little cemetery of La-Celle St. Cloud!

The other death is that of Lord Roberts. In a way it was a fine one, the death of a soldier among his brethren in arms, even if he did die of illness. But a cruel blow it must have been, all the same, to be carried off without seeing the end of such hostilities as these, the greatest in all history.

"S."

THE TREATMENT OF GUNSHOT WOUNDS OF THE LUNG.

DENVER, COLO., April 28, 1915.

Mr. Editor: Twenty-five years ago I had a case of gunshot wound of the lung in which slow but constant hemorrhage through the bronchial tubes in a few days carried my patient along "the trail of souls departing to the Spirit Land" (as the Indians call the Milky Way).

At that time I was making many post-mortems and I noticed the resiliency of the lung tissue and the way in which the lung collapsed and contracted when air was admitted to the thorax.

I thought then this idea might be made use of in handling gunshot wounds of the lungs, namely, to allow the contraction of the lung to constrict and close the blood vessels in selected cases, where too large blood vessels were not involved, until the blood vessels were filled with an organized clot after which the lung could be allowed to expand.

Since that time I have had under my care a famous U.S. naval officer who told me that in the Puget Sound country he had pleurisy with effusion but it was not discovered until he told his attending physicians that he felt as if his left lung were "jammed under his left ear."

I have had a New York Wall Street broker in Denver for tuberculosis of the lung develop a pneumothorax of the left side which pushed his lung over so hard that the heart's apex beat was beyond the sternum on the right side.

Aspiration, with a hiss of escaping air through the hollow needle like escaping steam, converted his respiration from 47 to 17, and a good night's sleep relieved an agony of 48 hours, and the patient recovered.

A case of empyema of the left side which came to me from the Philippines right after the Spanish war in which so many quarts of pus were evacuated by incision through the skin, made in a sitting posture (the patient could not lie down), and a thrust of a trochar into the thorax while only half etherized and nearly in collapse sent the pus spurting with such force that the first basin to catch it had to be held three feet away from the wall of the chest, the next basin two feet away, the third one a foot away, or the pus would have spattered into our eyes. (I had no rubber tubing with me for my trochar.) The patient recovered.

Now, if human beings can live with the chest cavity of one side filled and distended with pleuritic fluid, with air, or with pus, they can live with an artificial pneumothorax or with a chest distended with salt solution or filled with air alone without any pressure, as in a bad empyema before resection of ribs.

Why cannot artificial pneumothorax or distention with normal salt solution be used to compress certain selected, otherwise fatal, gunshot wounds of the lung until hemorrhage ceases and the wound heals after which the thorax can be aspirated and the lung allowed to expand or the thorax can be handled as an empyema?

Upon the firing line or just back of it, where other conveniences for pumping air or sterile salt solution were not at hand, air could be pumped into the pleural cavity with a rubber tube and a bulb (a No. 1 Davidson syringe would do) and the bullet hole or holes plugged with gauze covered with rubber tissue.

Even no pressure of air may be required. Simple admission of air to the thorax may allow the lung to retract and contract and close the bleeding vessels, and overcome the expansile thrust of the contracting right ventricle.

I have waited long for another gunshot wound of the lung. I may never have one. Perhaps this letter may reach the eye of a surgeon in Europe or America who might consider the idea worth trying.

Very truly yours,

O. J. PFEIFFER, M.D.

THE NASO-PHARYNX AS A PORTAL OF ENTRY FOR AIR-BORNE INFECTIONS.

COLONIAL BUILDING, BOSTON, May 6, 1915.

Mr. Editor: It is evident that you must have had your "ear to the ground" when you wrote the timely editorial, in the JOURNAL for even date, upon the sore throat epidemic in Dorchester and Milton. I cannot conceive of better advice to be given in the absence of direct evidence. As Professor Flexner has proven that epidemic poliomyelitis is conveyed by germs (or spores) entering or leaving the naso-pharynx as I have been suggesting in regard to what I insist upon calling air-borne infections, so in these "septic sore throat" cases there can be no other way of explaining their etiology. I personally investigated a similar epidemic which "broke out" in a large boarding school for boys, situated two miles from a city where other cases had occurred simultaneously. In the case of the boarding school it was very plain that the milk supply being local was "above reproach." There was, howeved, a single meteorological feature involved which could not have been satisfactorily explained had the observer entered the city from the North. There was snow upon the ground everywhere in the vicinity. The last storm to pass over the state had come from the South and Southwest. It had previously passed over uncovered territory with "slight precipitation." This territory, about 75 miles south, included an area previously "infected" there having been some "mild sore throats" reported therein. It is on record that an extensive and very severe winter storm which had moved northwards across Europe from Italy left in its wake "great precipitation." It is also known that such storms purify the air and this was true in this instance, but the severity and intensity of the storm set up vortices and "holes" in the air which were "filled up" by infected air from areas outside the storm-belt. There resulted a visitation of the influenza, and Munich, Vienna, Dresden and even more northern cities recorded an epidemic of La Grippe.

Judging from this and other observations and having had great clinical experience with diseases whose original 'nidus' is unquestionably the rhino-pharynx and specifically that portion which includes the hypophysis, I re-assert that it is practically impossible to conclude that such diseases, to include "streptococcic septic 'sore throat' or septic tonsillitis," first enter the economy through the alimentary canal.

EDMUND D. SPEAR, M.D.

THE POSSIBLE SYPHILITIC ORIGIN OF CERTAIN BLADDER ULCERATIONS.

BOSTON, May 7, 1915.

Mr. Editor: In the JOURNAL for May 6, Dr. Hunner records an interesting series of cases of bladder ulceration in women, all carefully studied and no definite cause found for their appearance. In the discussion of his paper, also in the JOURNAL, there is no mention made of the possibility of syphilis being the cause of these ulcerations. Rheumatism and tonsillitis were considered, but not incriminated. Certain points in the history of the cases (italics mine) are of interest in this connection. In the first place, the *chronicity* of the ulcers or symptoms which were presumably due to the ulcers without any tuberculosis being found; thus one case, Case 3, had been treated for bladder trouble 20 years ago. Case 5, bladder symptoms for 6 years; Case 6, *nocturnal enuresis* up to the menarche; Case 7, bladder symptoms *as long as she can remember;* Case 8, *severe temporal headaches* since childhood. Dr. Hunner, speaking of the cystoscopic picture, alludes to the smooth, white scars of former ulceration. Smooth white scars in other parts of the body are at least suggestive of healed gummata. He says: "Our conclusion, therefore, is that the diagnosis of this peculiar form of bladder ulceration depends ultimately on its *resistance to all ordinary forms of treatment.*" In speaking of the pathologic picture, he says: "In some of the specimens this granulation tissue is fairly richly supplied with capilaries, but in most of them there is a preponderance of connective tissue and infiltration of small round cells and leucocytes." This latter is more or less suggestive of gummatous ulceration. In the light of the suggestive, but in no way positive, symptoms and clinical evidences, it would seem as if syphilis was a possible, even a probable, factor in some or all of these cases.

Let us recapitulate. Ulcerations of *very long standing,* not malignant, not tuberculous, with certain suggestive symptoms of possible congenital syphilis in some of the cases. White, smooth, scars, with a pathologic report not incompatible with gumma. Certainly with no other definite cause found, syphilis should be considered very strongly in these cases. It is not too much to say that a series of Wassermann's in cases of doubtful bladder ulceration, would show a considerable percentage of unrecognized syphilis.

Very truly yours,

WM. PEARCE COUES, M.D.

BELGIAN PHYSICIANS' RELIEF FUND.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR THE AID OF THE BELGIAN PROFESSION FOR THE WEEK ENDING MAY 8, 1915.

CONTRIBUTIONS.

The Medical Society of St. Lawrence County, Gouverneur, N. Y.	$ 25.00
The Orange County Medical Asso., Santa Ana, Cal.	25.00
Dr. Parke W. Hewins, Wellesley Hills, Mass.	25.00
Dr. Emma B. Culbertson, Boston, Mass.	25.00
Dr. L. L. McArthur, Chicago, Ill.	25.00
Dr. V. B. Jackson, Washington, D. C.	10.00
Receipts for the week ending May 8	$ 135.00
Previously reported receipts	6585.50
Total receipts	$6720.50

Previously reported disbursements:

1625 standard boxes of food @ $2.20..$3575.00
1309 standard boxes of food @ $2.30.. 3010.70

Total disbursements.....$6585.70

Balance .....$ 134.80

F. F. SIMPSON, M.D., *Treasurer*,
7048 Jenkins Arcade Bldg.,
Pittsburg, Pa.

NOTICES.

DOCTORS FOR DUTY IN A BRITISH BASE HOSPITAL.

Harvard, Columbia and Johns Hopkins Universities propose to provide a surgical unit to take charge of a base hospital for British wounded, and for that purpose there is desired a staff of thirty-two surgeons; sixteen of those will preferably be well trained fourth-year graduates or house-officers having just completed a surgical service. The expedition will start between June 5 and 15. The Harvard contingent will take the first detail for a minimum service of three months. Preference will be given to men willing to stay six months.

The service will be either in England or in France, depending upon exigencies. Transportation both ways will be paid, and men will be given regular army pay. Men wishing to join the expedition will please apply in writing to Dr. Edward H. Nichols, 294 Marlboro Street, or to Dr. C. A. Porter, 254 Beacon Street, or to Dr. Wm. E. Faulkner, 290 Marlboro Street, stating their age, medical education and surgical training.

NURSES FOR DUTY IN A BRITISH BASE HOSPITAL.

Harvard, Columbia and Johns Hopkins Universities propose to provide a surgical unit to take charge of a base hospital for British wounded, for a period of six months. The expedition will start probably sometime between the first and the fifteenth of June.

For this unit there is desired a staff of seventy-five trained nurses, consisting of one matron, twenty-six sisters (head nurses), and forty-eight ward nurses.

Nurses will be paid regular army rates: sisters, "head nurses," 50 pounds per annum: staff nurses, "ward nurses," 40 pounds per annum. Free transportation to and from the hospital, probably an American ship will be provided.

The service will be for a minimum period of three months, and preference will be given to nurses agreeing to serve for six months. The service may be in England or in France, depending upon exigencies.

Nurses wishing to join this unit, will please apply in writing to Dr. E. H. Nichols, 294 Marlboro Street, Boston, stating their training and experience, with references to doctors for whom they have worked. Nurses who have had special operating room experience, will please so state.

FIFTEEN DOCTORS WANTED.

The American Board of Commissioners for Foreign Missions needs at once fifteen surgeons and physicians for work in mission fields. Nine are wanted for China, four for Turkey, one for Africa and, most urgent of all, one at once for relief work in Serbia, with station at Monastir.

For China, six men and three women are wanted to join hospitals already running which treat from ten thousand to thirty thousand cases a year. The new men and women will be associated with surgeons in charge.

In four hospitals in Turkey physician-surgeons are wanted in association with doctors already on the ground. The American hospitals have increased their influence enormously during these months of war and the men on the ground must be re-enforced. In Durban, Africa, a physician-surgeon is urgently needed.

The Board lays down no sectarian test. The candidates should be not over thirty-five years of age. In equipment the Board requires a degree from a first-class institution and in addition an interneship or its equivalent. Specialization is not demanded though special preparation is welcomed. Details as to service may be secured from Dr. C. H. Patton, 14 Beacon Street, Boston.

APPOINTMENTS.

UNIVERSITY OF CALIFORNIA.—*Dr. Samuel H. Hurwitz*, formerly of Boston, has been appointed instructor in research medicine on the George Williams Hooper Foundation for medical research at the University of California.

UNIVERSITY OF MICHIGAN.—*Dr. Albion W. Hewlett*, professor of medicine at the University of Michigan, has been appointed visiting lecturer on medicine at the Harvard Medical School and temporary visiting physician at the Peter Bent Brigham Hospital, Boston.

UNIVERSITY OF TORONTO.—*Dr. Andrew Hunter*, formerly of the medical department of Cornell University, has been appointed professor of pathological chemistry at the University of Toronto.

RECENT DEATHS.

DR. SIR WILLIAM RICHARD GOWERS, who died on May 4 at London, was born in 1845 and was a graduate of Christ Church, Oxford, and of University College, London. He was a Fellow of the Royal Society and of the Royal College of Physicians of London and was known as a neurologist of international repute. He had received the degrees of M.D. from Trinity College, Dublin, and LL.D. from the University of Edinburgh. He was consulting physician of the University College Hospital, London, and of the National Hospital for Paralyzed and Epileptic. He was a member of the Royal Society of Science of Upsala, Sweden, and an honorary member of the Society of Russian Physicians at Petrograd. The best known work by Dr. Gowers is his "Manual of the Diseases of the Nervous System."

DR. JAY W. SEAVER, who died recently in Berkeley, Cal., was born at Craftsbury, Vt., in 1855. He graduated from Yale College in 1880 and received the degree of M.D., from Yale in 1885. He was for twenty years director of the Yale gymnasium and was at one time president of the American Association of Physical Educators and of the Society of College Gymnasium Directors. He was a writer on physical development and physical education. He retired from active work in 1905.

DR. GARDNER CALEB HILL, who died on April 30, at Keene, N. H., was born at Winchester, N. H., in 1829. He studied medicine as an apprentice to Dr. Comings of Swanzey, N. H., and received the degree of M.D. from the Castleton (Vt.) Medical College in 1856. After practising his profession for a time at Warwick, Mass., he removed to Keene in 1867. He is survived by his widow.

DR. SETH WIGHT KELLEY died at his home in Woburn, Mass., May 5, from cerebral hemorrhage. He was born in Oxford, Me., June 26, 1848, and received the degree of A.B. from Dartmouth College in 1869 and M.D. from Harvard University in 1874. In this year he joined the Massachusetts Medical Society, and settled in Woburn. He had been chairman of the Woburn board of health and a member of the school committee. He is survived by his second wife and one daughter. Dr. Kelley was councilor from the Middlesex East District from 1891 to 1898.